ATLANTIC CITY SHOW REPORT—

15 Pages Telling Why Mill Men Got Excited... page 46

Textile World

JULY 1960

PRICE $1.00

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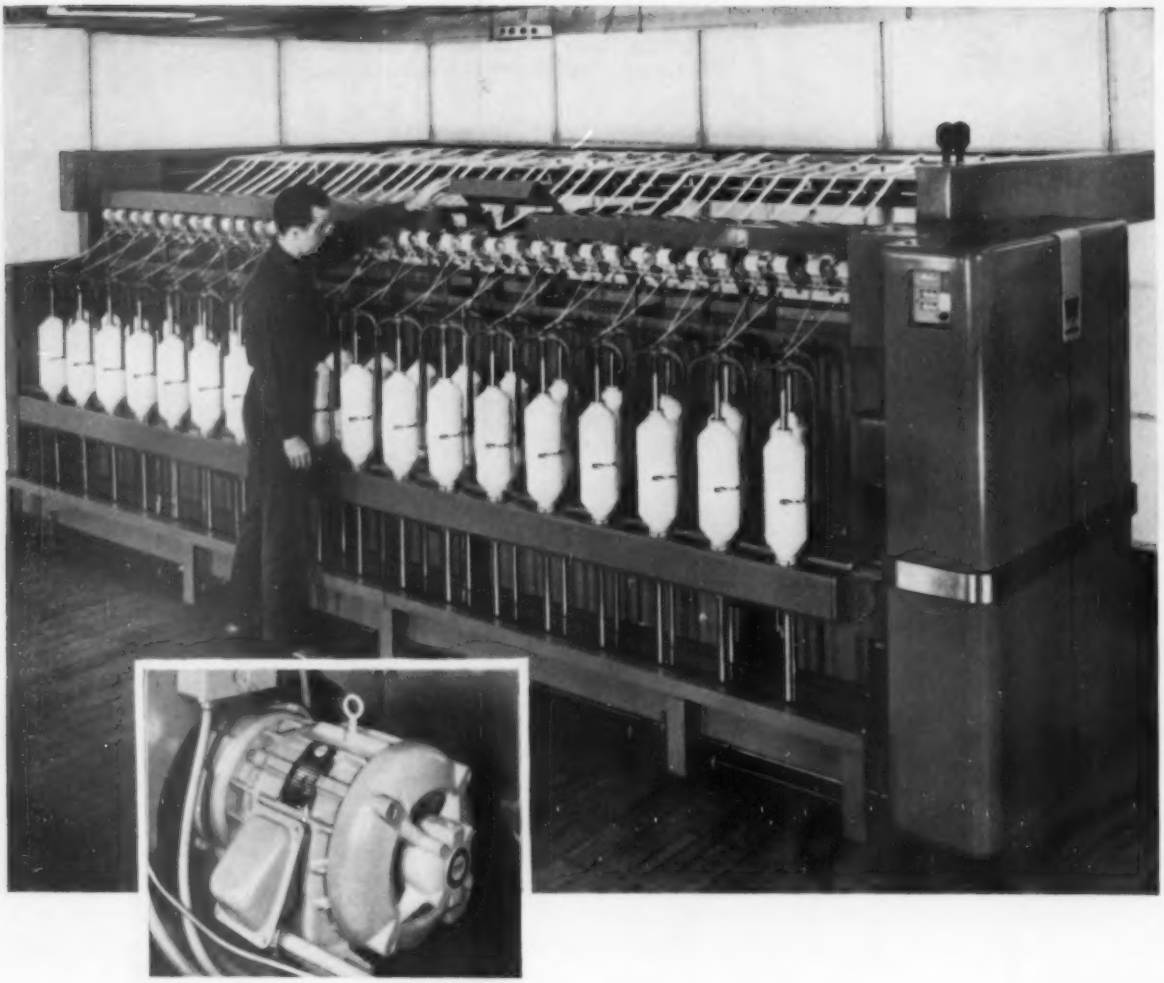


DIEHL* Electronically Controlled Power Transmitter Drives Whitin's New Model "P" Roving Frame

The new Whitin Model "P" Roving Frame, featuring high speeds, larger packages, and automatic positioning, is driven by a DIEHL electronically controlled power transmitter.

The DIEHL drive consists of a textile mill type enclosed lint free motor, an integral mounted air operated disc clutch and an electronic system which automatically controls the speed during start-up acceleration of the frame; thus improving quality of roving and increasing production. The rate of acceleration is adjustable and the drive positions the flyers automatically when the frame stops for doffing.

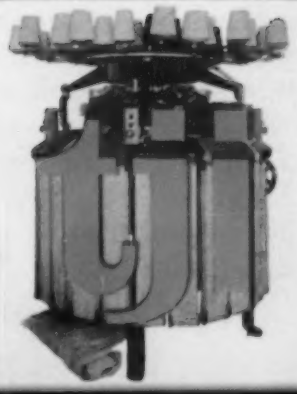
Ask DIEHL to assist you in engineering your drive problems.

*A Trademark of DIEHL MANUFACTURING COMPANY

DIEHL MANUFACTURING COMPANY
A Subsidiary of THE SINGER MANUFACTURING COMPANY
Finderne Plant, SOMERVILLE, NEW JERSEY
Chamblee (Atlanta) • Charlotte • Chicago • Needham Heights (Boston) • New York • Philadelphia

2730

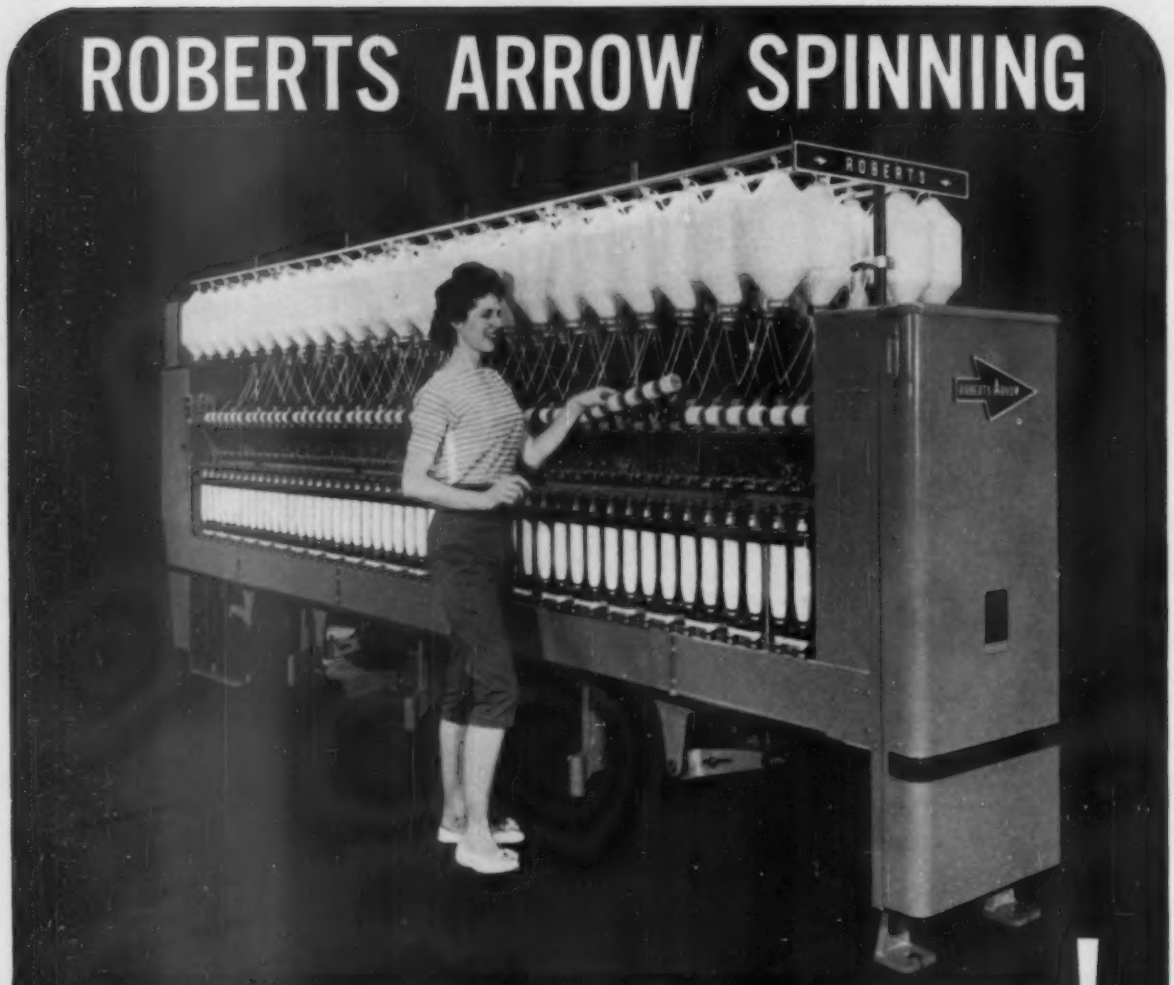
The TJI-12 is truly versatile! This unique machine produces women's suit materials knit in double pique with unlimited design scope, in cuts from 5 to 14 N.P.I. Four color yarn changers at each feed provide a wide choice of colors. Fancy stitches, knit on cuffs, offer fabrics that are different. The TJI-12 is made to protect your reputation.



WILDMAN JACQUARD

WILDMAN JACQUARD CO. • 1210 Stanbridge Street • Norristown, Pennsylvania
Manufacturers of HEMPHILL BANNER Knitting Machines / *A subsidiary of Draper Corporation, Hopedale, Mass.*

ROBERTS ARROW SPINNING



Spindle Speeds Over 13,000!

One of the most frequent questions asked today concerns high spindle speeds. The answer comes from many of the 850 Roberts Arrow Spinning Frames running in leading mills since 1956. Three examples are shown at the right.

The new and refined Arrow compares advantageously with all other all-ball-bearing frames and greatly outperforms all conventional and standard-type spinning frames. The Arrow offers the greatest dollar-for-dollar-value against any other make of frame in dependable performance, lowest initial cost, and maintenance-free operation.

Arrow Spinning is available for either the cotton or the worsted system for natural or man-made fibers or blends.

3 MILLS RUNNING ARROW FRAMES AT 12,300 to 13,200 R.P.M.

- **A major sheet manufacturer runs 36's warp yarn with 2" ring at 12,300 r.p.m. spindle speed on 44 Arrow frames.**
- **A major manufacturer of Dacron-cotton fabrics runs 50's on 66 Arrow frames with a 1-7/8" ring at 13,200 r.p.m. spindle speed.**
- **A major broadcloth manufacturer using 96 Arrow frames makes 40's with a 1-13/16" ring at 12,800 r.p.m. spindle speed.**

ROBERTS COMPANY

SANFORD, NORTH CAROLINA

MORE THAN 3½ MILLION SPINDLES NOW EQUIPPED WITH ROBERTS HIGH DRAFT

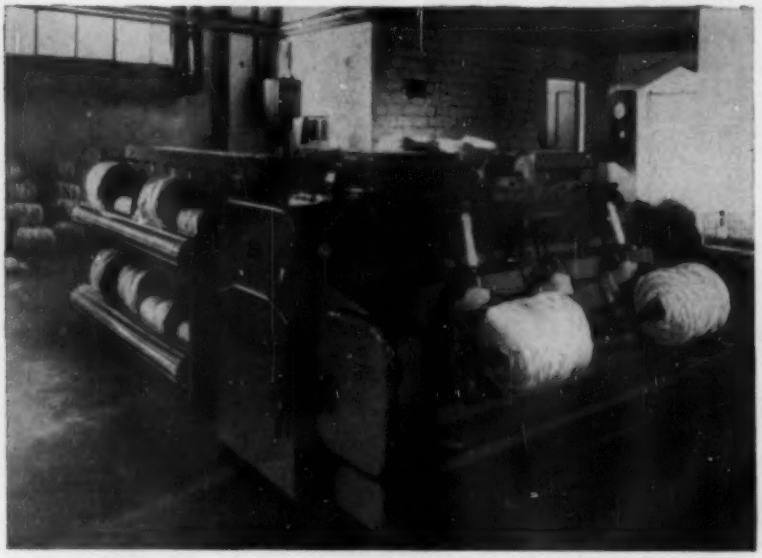
ROBERTS NEWS

PUBLISHED BY ROBERTS COMPANY SANFORD, NORTH CAROLINA

SANFORD, NORTH CAROLINA, U. S. A. 1960

Roberts enters new textile machinery field

Adds Worsted Preparatory Equipment to Line of Spinning Frames



Roberts-Tematex ParaBlender with individual ball delivery.

Three new worsted system preparatory machines of latest design and technological improvement — ParaDrafters, AutoEveners, and ParaBlenders —have been added to the Roberts Company line under the name Roberts-Tematex.

They are used in yarn spinning mills as well as in combing and top making plants to pin, parallelize, draft, and blend worsted and other long staple fibers in operations that precede roving and spinning.

Roberts-Tematex machines are considerably more rugged than other machines which are available, hold their settings well and provide high production performance.

The *ParaDrafter* parallelizes and drafts the fibers and can be combined with the *AutoEvener* which automatically evens the weight of the delivered sliver through electronic and mechanical means to within ±1%, from an entering weight variation of up to ±20%.

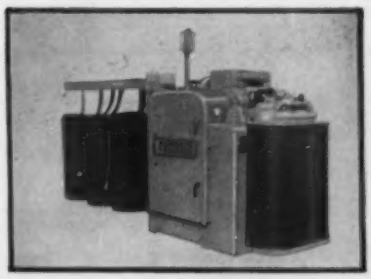
ParaBlenders also parallelize and draft but in combination with a blending operation that provides many doublings and sandwich blends the fibers.

ROBERTS-TEMATEX PARADRAFTER • 8" wide pinning field, 88 fallers per head, flat pins • Three thread faller screws • Fallers .238" thick, pitch .354", 1200 drops per minute • Entering sliver up to 3500 grains per yard • Draft ratios 5 to 15 • Net production delivery up to 270 pounds per hour • Creels for up to 12 cans or balls or combination of cans and balls • Delivery to cans 15" x 36" up to 24" x 48" • Delivery to balls up to 24" diameter x 18" wide (26 pounds) • Hydraulic weighting of the delivery rolls • Hydraulic lifting of head for inspection • Shock absorbers for faller drops • Gradual introduction of fallers into sliver • Automatic stop motions with indicator board to show location of stoppage • Central lubrication • Simple changing of draft and pressures • Static eliminator • With single, bicoil, dual or quad delivery

ROBERTS-TEMATEX AUTOEVENER • Automatic and instantaneous correction of sliver weight • Corrects entering sliver with plus or minus 20% variation • Corrects delivered sliver weight to plus or minus 1% • Mechanical-electrical operation of the measuring, delay and variation units • Fitted only to single head, single delivery ParaDrafter • All ParaDrafter technical details apply

ROBERTS-TEMATEX PARABLENDER • All ParaDrafter technical details as above apply • Melange blending of a high number of slivers • Net Production 400 to 500 pounds per hour • Combines two ParaDrafter heads • Individual ball delivery for each head so machine can be used as two parallel ParaDrafters • Arrangement for combining and sandwich blending finished slivers onto a center ball delivery • Pressure spray oiling for center ball

PARADRAFTER arranged for can feed and dual delivery.



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Coming in August:
New Man-Made Fiber Table

TEXTILE WORLD's authoritative man-made-fiber table appears again in next month's issue with comprehensive technical information on all the new fibers that are having such heavy impact on the industry today. Revised and up-dated so as to supplement the September 1959 table, the new chart will include information on the physical properties (as well as the microscopic appearance) of the newest, most important man-made fibers available to textile-mill men. Watch for it in August TEXTILE WORLD.

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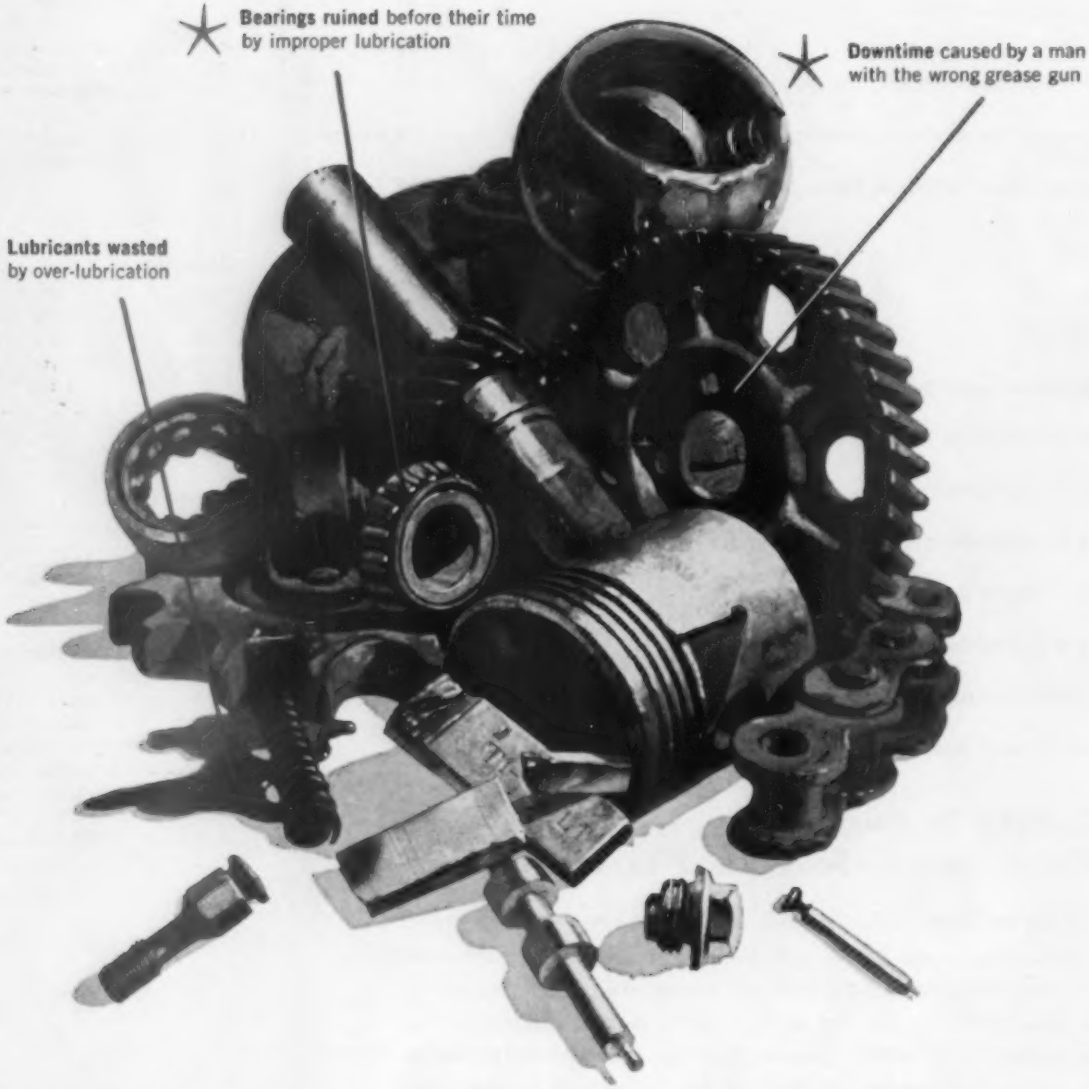
ANNOUNCING THE TEXACO "Stop Loss" Program

Created to starve a scrap pile at its source . . . and all it represents ★


★ Bearings ruined before their time by improper lubrication
★ Downtime caused by a man with the wrong grease gun
★ Lubricants wasted by over-lubrication

LUBRICATION IS A MAJOR FACTOR IN COST CONTROL

Even though your mill is *already* an efficient operation, a Texaco "Stop Loss" Program can yield important savings in maintenance, production, purchasing and inventory.

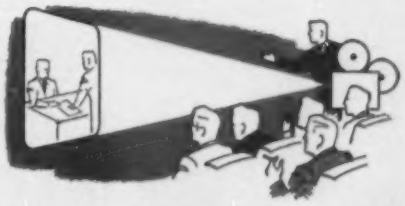
What it is; why it will work for you. The Texaco "Stop Loss" Program is a complete package specifically designed to modernize your lubrication practices—to keep pace with your updated production and marketing procedures. "Stop Loss" is based on our years of experience in organizing lubrication in industry.

If yours is an average mill, the adoption of this program will actually show up on your profit sheet. That's because the savings from "Stop Loss" go *directly* into net profits.

Lubrication, far from being an expense item, is actually one of your most effective cost control tools!

HERE'S WHAT YOU NEED TO HELP STARVE YOUR SCRAP PILE

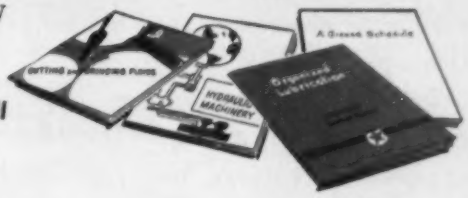
These components of the Texaco "Stop Loss" Program are available to interested mill groups:



1. New 20-minute sound-color film "Stop Loss with Organized Lubrication"—created to show the many opportunities for cost control through organized lubrication practices.

2. A Lubrication Control System that takes the guesswork out of lubrication scheduling. It costs almost nothing to install, yet can save as much as 15% of your maintenance costs.

3. A film "package" for mill departments. This consists of educational films that cover the selection and application of greases, hydraulic oils, cutting oils, etc.



4. Co-ordinated booklets on the film subjects plus many others that can be used as guides in specific areas.

We believe that a modern Texaco "Stop Loss" Program will produce a package of economies in your mill.

MAKE YOUR RESERVATION TODAY
to see one of the year's most important management movies!

TEXACO INC., Dept. TW-20
135 East 42nd Street
New York 17, N. Y.

Please arrange a showing of "Stop Loss" at my mill.

Name_____

Title_____

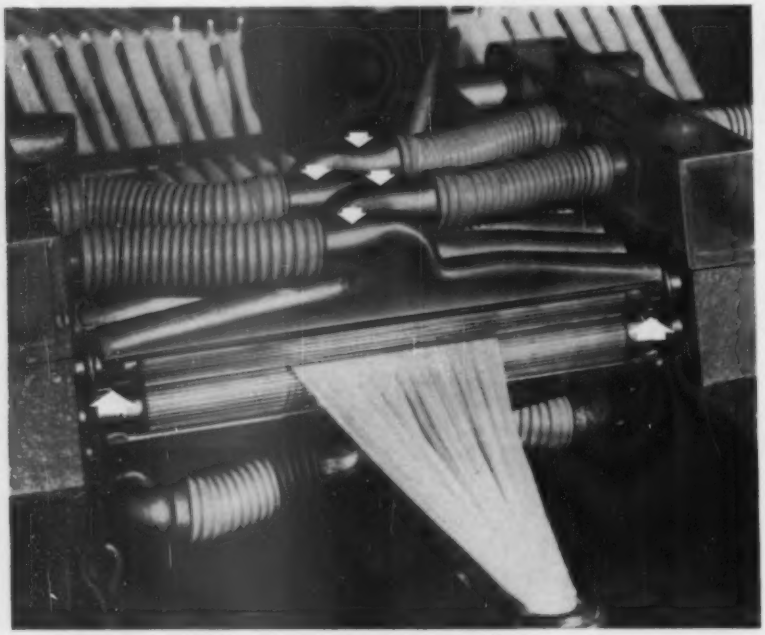
(Please attach to your letterhead)

TEXACO
Throughout the United States
Canada • Latin America • West Africa

CIRCLE 7 ON READER SERVICE CARD

Only IDEAL *Feathertouch* DRAFTING has all these features

Vacuum Cleaning of each Roll



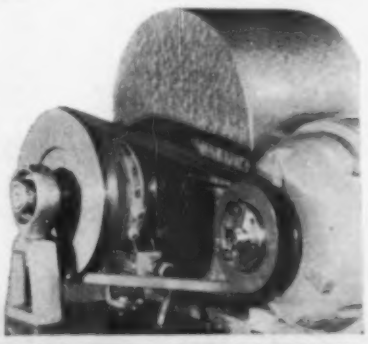
Each frame has its individual vacuum cleaning system and each top and bottom roll has its own close-fitting suction cleaning hood which extends over the entire length of the flute and the roll journals as well. These eliminate bottom and top clearers and wiper or rubbing parts, and all clearer and roll neck picking. They keep clearer slubs from entering the stock and remove a greater percentage of dirt, trash, and fly. Because the vacuum acts on the roll instead of the web, it does not remove good staple. The Ideal Vacuum System also keeps rolls cool at high speeds.

Ideal Ball Bearing Spacing Sections

This is the Ideal feature which first made high speeds and better quality sliver possible. Ideal Spacing Sections are independent of the rolls . . . do not revolve . . . transmit no resistance . . . never wear to throw rolls out of alignment . . . and provide free-floating top roll action which automatically evens out thick and thin places in the sliver. They positively prevent cutting, bruising, or damage of any kind to the stock.

Ideal Electro Magnetic Clutch

This eliminates pulleys, belts, countershafting, rockershafts, etc. — which are all enemies of smooth operation and long frame life. The Electro-Magnetic Clutch assures smooth starting and smooth instant stops. It practically eliminates vibration even at speeds of 750 ft. per min.



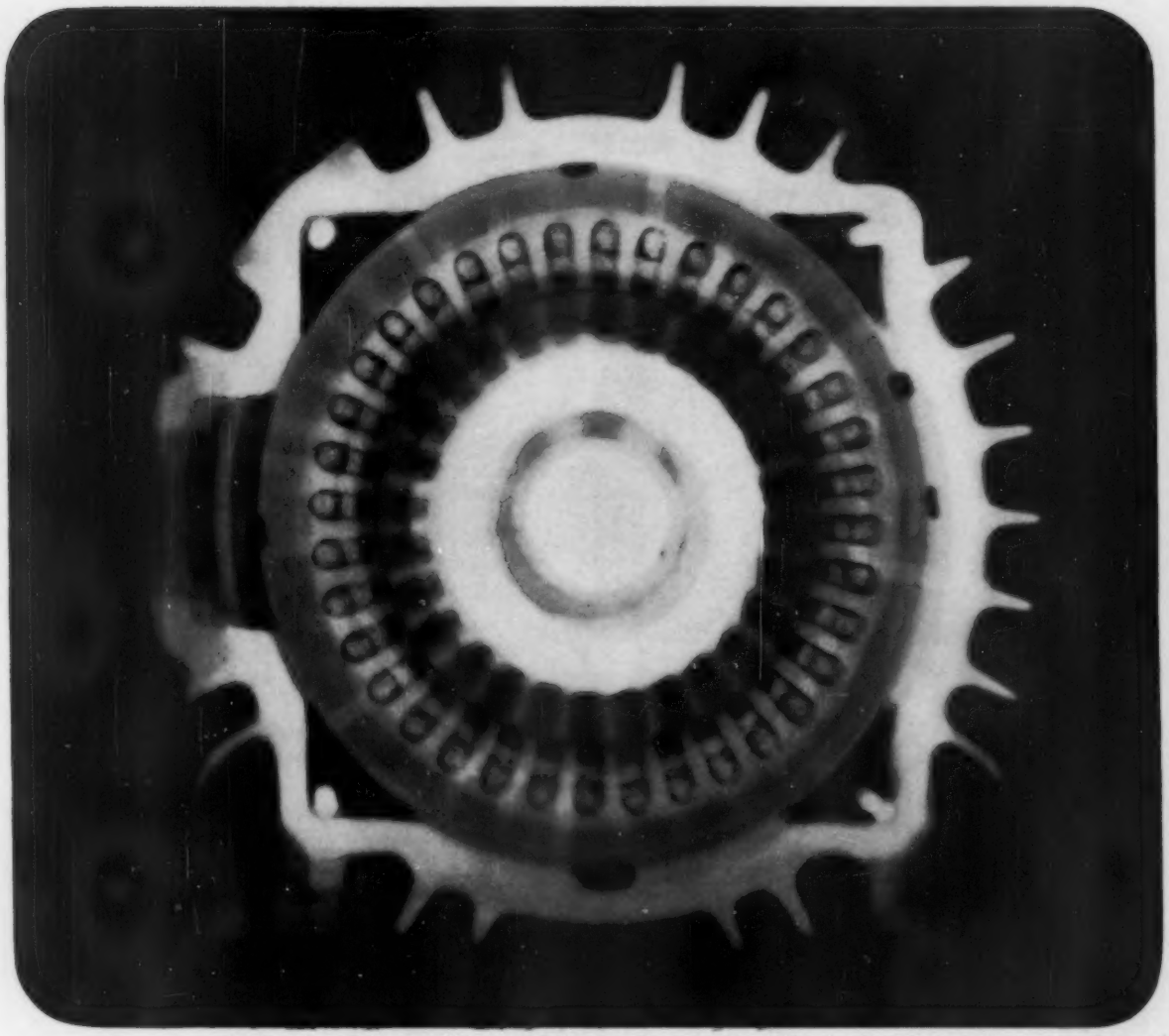
These and other valuable features are available on completely new Ideal frames or completely rebuilt frames. Let us tell you about our generous trade-in offer.

Ideal Industries, Inc.
Bessemer City, N. C.

THE ORIGINATORS OF HIGH SPEED DRAWING

ALLIS-CHALMERS

A-1343



Radiograph of a 5-hp, Type GZQ, totally-enclosed textile motor, "X-rayed" with a 24-million volt Allis-Chalmers Betatron.

How to "read" an industry standard

Invisible standards of perfection made this motor the industry leader!

Thinking beyond the written standards of motor design . . . striving for a new degree of perfection . . . has resulted in this Allis-Chalmers TEFC motor for textile applications. It's a motor which is fast becoming an industry standard in itself . . . suitable for all textile plant uses.

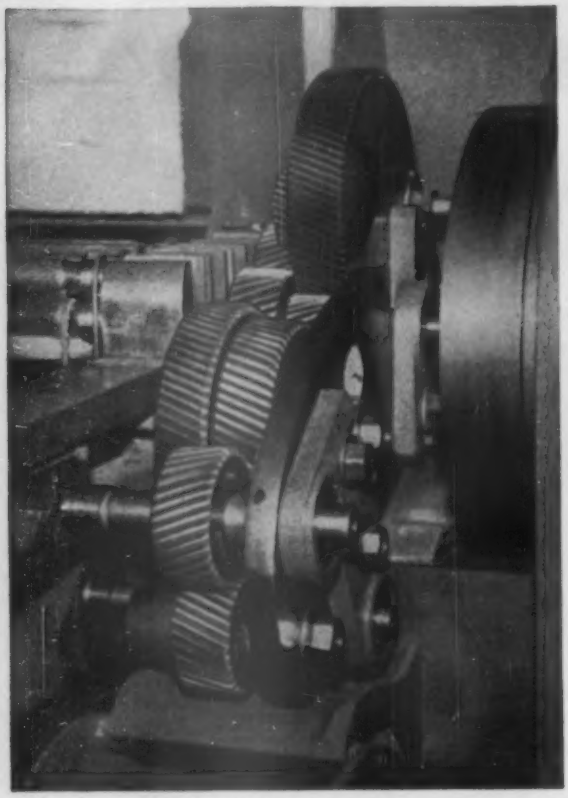
A-C pioneered the much-imitated-but-never-equalled ribbed frame design. Ribs are specially contoured and finished to prevent lint from sticking regardless of humidity.

The fan can be located on either end of the motor without changing the "BA" dimension. The powerful fan circulates cooling air and keeps lint moving away from the motor in even the most lint-laden locations.

For more facts on how you can standardize on Allis-Chalmers Type GZQ textile motor, call your nearest A-C representative or distributor. Or write, **Allis-Chalmers,** *Industrial Equipment Division, Milwaukee 1, Wisconsin.*

Allis-Chalmers lint-free totally-enclosed fan-cooled textile motor driving spinning frame. Can be applied in any production area . . . permits motor standardization throughout the mill.

Put strength, long life, silence into gears, couplings, loom parts with C D F Celoron® plastic



CELORON-TO-CELORON GEARS in drawing rolls made by Ideal Industries, Inc., Bessemer City, N. C. These are helical-cut gears—the toughest to machine, requiring the toughest material. Celoron is it. Other Celoron parts for this application are shown below, top right.

WORK MIRACLES IN TEXTILE MACHINERY—with this amazing golden plastic material! Celoron gears help eliminate noise, reduce wear on mating metal gears; and even the roughest-used helicals last . . . and last . . . and last.

HIGH MECHANICAL STRENGTH. Typical Celoron strengths: tensile, 6,500 psi; flexural, 10,000 psi; compressive, 25,000 psi; shear, 8,500 psi. Dimensionally stable and readily machined, Celoron fills the bill where costly metal parts fail.

ELECTRICAL INSULATION VALUE. Celoron is a non-conductor with high electrical insulation value. It makes ideal mechanical-electrical parts. Celoron couplings effectively insulate motors from driven machinery.

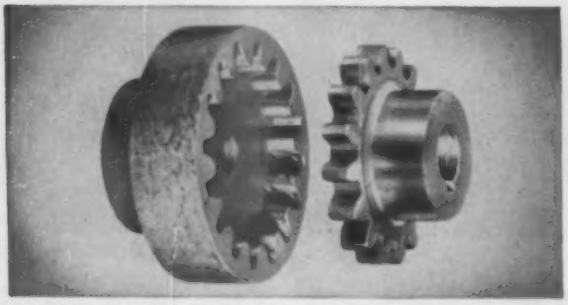
BETTER SERVICE FOR THE SOUTH. Besides having sales engineers in all principal cities, C-D-F maintains a specialized plant-warehouse stocking Celoron parts and Diamond Fibre receptacles for the Southern textile industries at 834 Hayne St., Spartanburg, S. C. Your Celoron gear blank, coupling, or loom part will reach you fast from this wide-awake distribution center.

Keep in close touch with *your* C-D-F sales engineer—a good man to know!

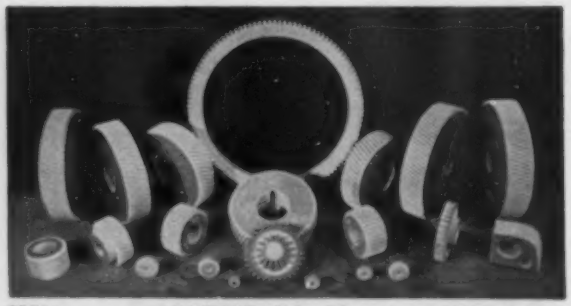
CONTINENTAL-DIAMOND FIBRE

A SUBSIDIARY OF THE Budd COMPANY • NEWARK 55, DEL.

In Canada: 46 Hollinger Road, Toronto 16, Ont.

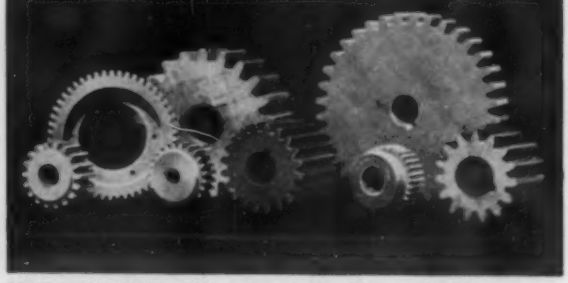


LOW-COST, EASILY-ASSEMBLED C-D-F Celoron flexible coupling transmits power smoothly, efficiently, silently . . . needs no lubrication, works on vertical or horizontal shafts.

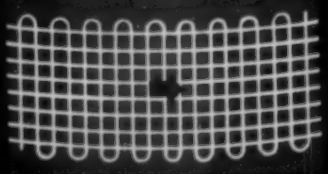


PRECISION MACHINED KEYWAYS help keep these Celoron parts silent and strong in the Ideal drawing rolls illustrated in top photograph. Note wide range of sizes and shapes.

YEARS OF SERVICE, freedom from maintenance, resistance to moisture—that's what these C-D-F parallel plugs, knife guides, binder bushings give the mill operator.



STRONG, SILENT CELORON makes both drive and driven gears. Metal gears don't develop excess play, last longer when they mate with Celoron. Many applications are 100% Celoron-geared.



UNIONMATEX

Individual Machines and Complete Installations for the Textile Industry

MANUFACTURING PROGRAMME: INGOLSTADT:

MAK:

SCHLAFHORST: SUCKER:

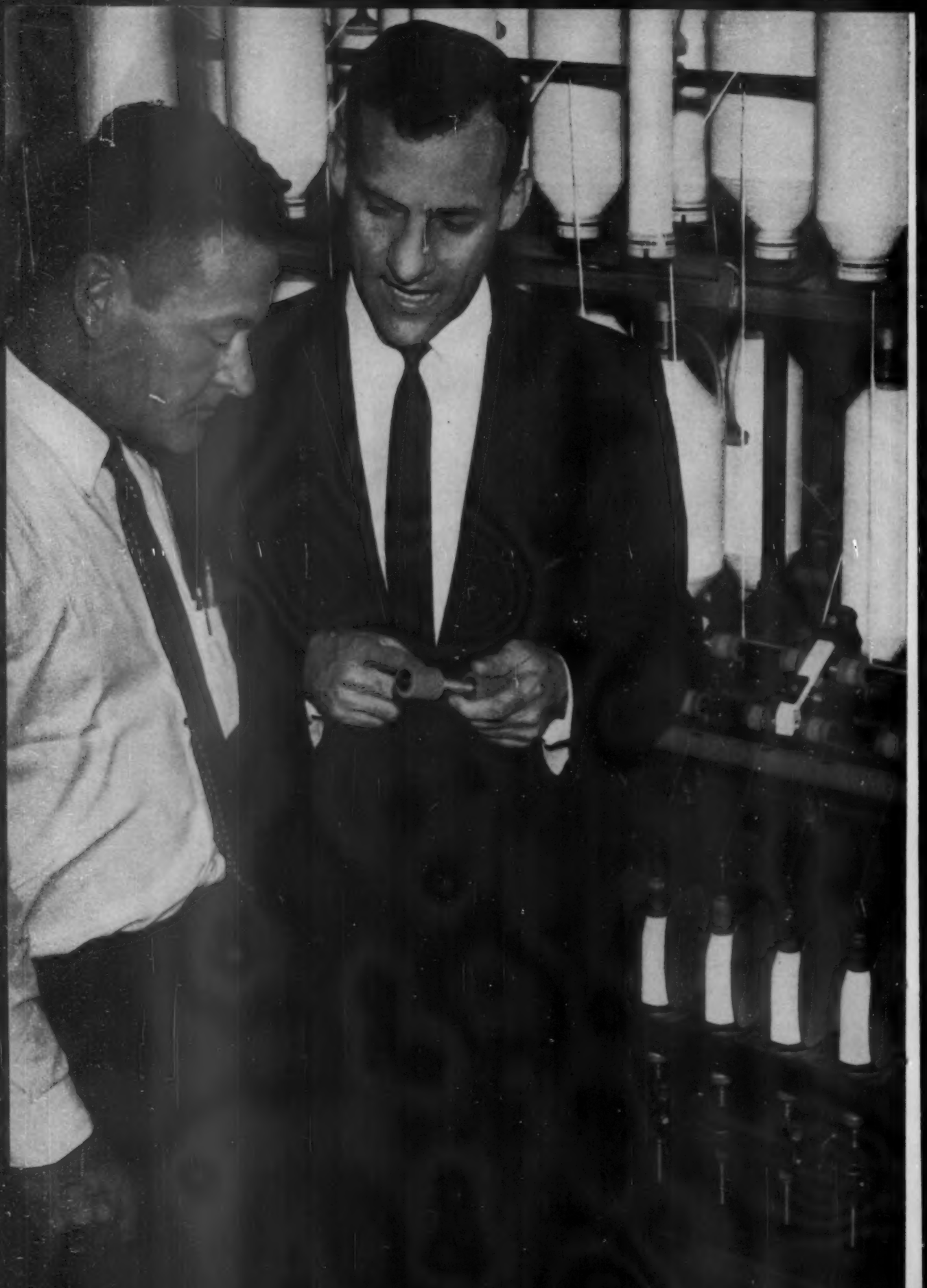
THIES:

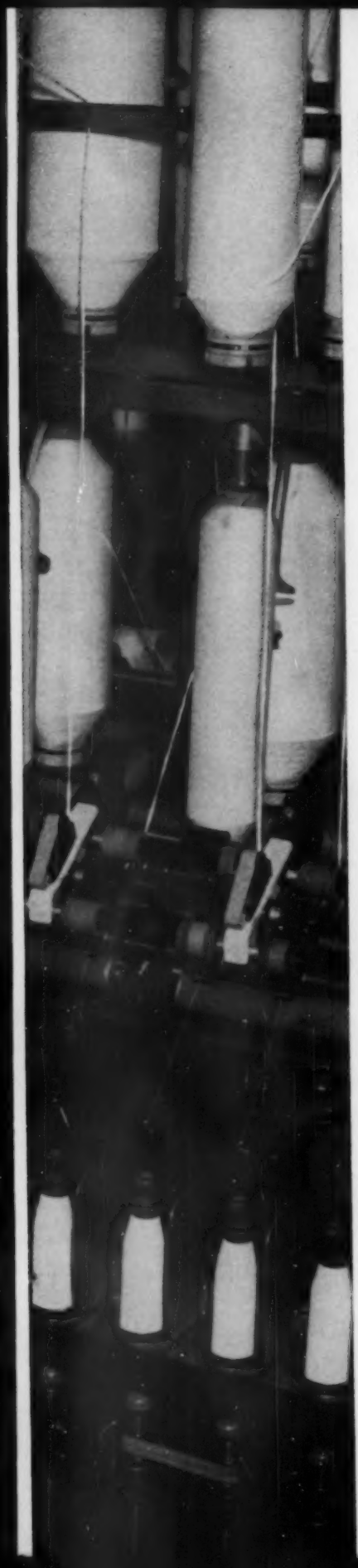
ASTRA:

KLEINEWEFERS:

MONFORTS:

UNIONMATEX





"Hack" Wilson, Overseer of Spinning at Highland Park Mills, Charlotte, N. C., discusses spinning cot performance with Armstrong representative J. T. Vernon.

Accotex Cots can help you keep yarn quality high

No two mills are exactly alike in equipment or methods. And every change made in drafting systems . . . or in fibers being spun . . . sets up new conditions. That's why there can be no universal cot material that will work equally well on every combination of frame or fiber.

In the broad line of Accotex Cots, however, you will find a roll covering which will help you eliminate trouble and get good performance with any fiber . . . on any high-draft spinning frame.

Where high static aggravates the lapping problem, Accotex NO-764, an anti-static material, has proved effective. Eyebrowing on spinning or roving frames with flat clearers can be minimized with NC-762, another anti-static roll covering.

On some frames, soft cot materials have been found to improve break strength and reduce yarn irregularities. Accotex Cots made of softer compounds are available to meet this need.

Your Armstrong representative will be glad to help you select the Accotex Cot that will give best performance with your frames and fibers. Call him or write Armstrong Cork Company, Industrial Division, 6507 Dauphin Street, Lancaster, Pennsylvania.

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new construction

improved performance

XB

rugged stability

mechanical excellence

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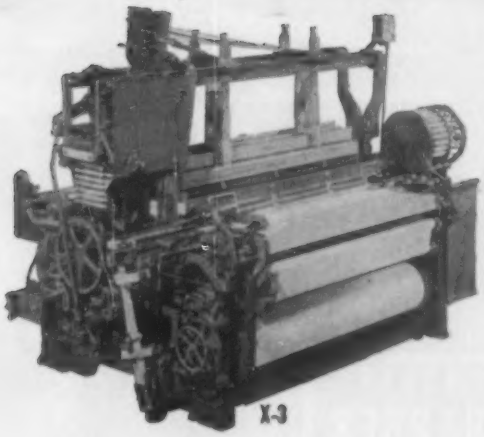
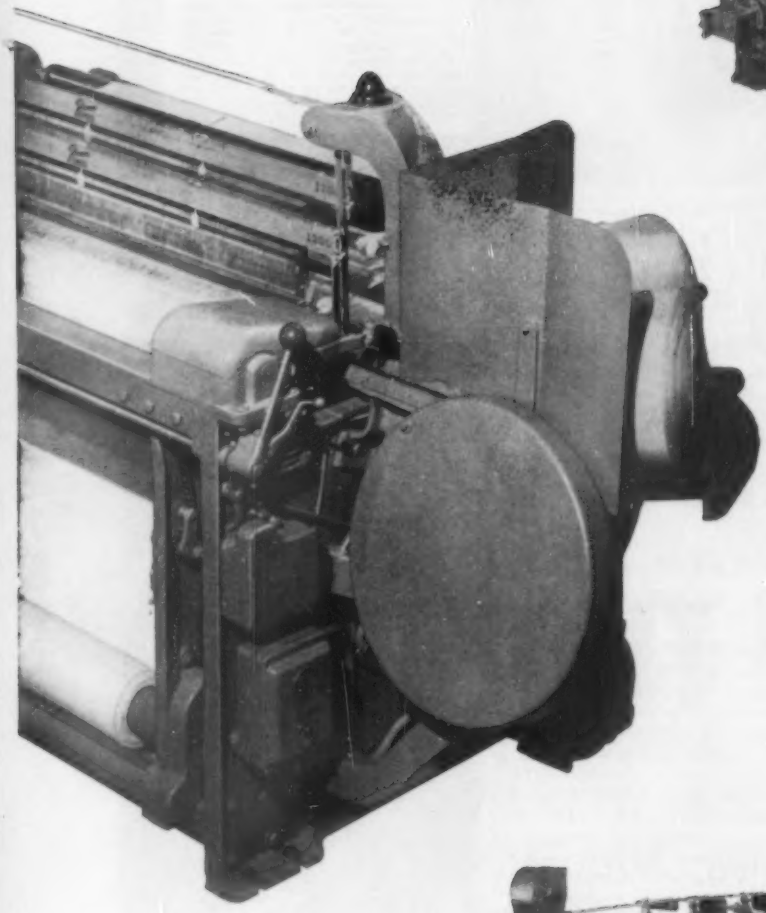
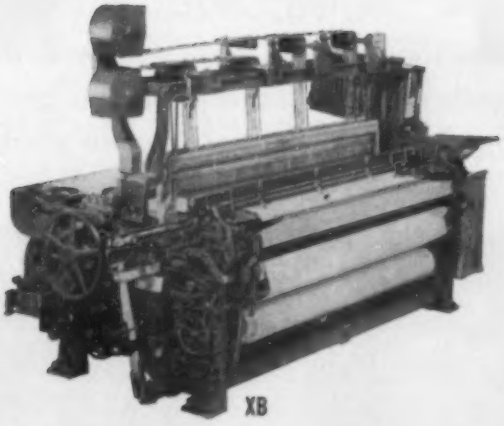


X-3



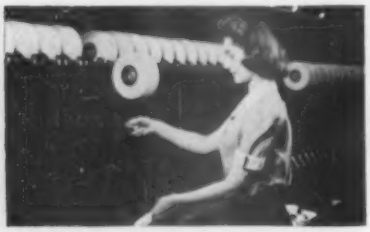


XB

An installation of two large Barber-Colman Multiple-Count Automatic Spoolers, arranged in a straight line. Note that the two nearest bays of the closest machine are just starting on the new set-up of a different count, while the next three bays are finishing a run (as indicated by full cheeses and empty bobbin bins).

BARBER COLMAN

Multiple-Count Automatic Spooler



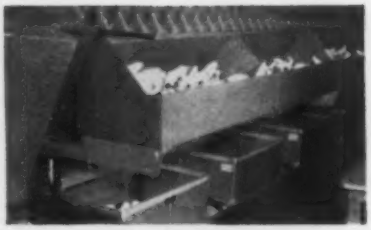
Spooler tender loading a full bobbin into the Spooler. The bobbin is dropped into a "pocket," and the yarn end is slipped into a spring clamp which positions it properly for the knotter to pick up.

Yarn man moving a trident of full cheeses from operator's table to a creel truck. He also returns trident of starters, removes boxes of empty bobbins, and keeps full-bobbin bins supplied. Boxes under operator's tables are for tailings, and cheeses to be rewound.

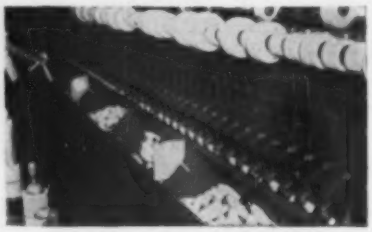
Sale yarn mills and producers of piece goods that use various counts or different mixtures will find that this machine can be a very profitable investment. It is still the famous and the very familiar Barber-Colman Automatic Spooler, but with this difference: now you can wind . . .

A DIFFERENT COUNT EVERY NINE UNITS

The machine is built in "bays" between uprights that support the traveler track, with nine bobbin-to-cheese winding units on each side of each bay. Empty bobbins, instead of being conveyed to a single sorting table, drop into separate boxes under each bay, thus enabling each group of nine units to be used for a different yarn count. Individual operator tables service each bay. The only limitation is that the extremes of different counts on the machine at any one time must fall within the range of the knotter in the traveler. Yarn or count changes can, of course, be readily made at any time, and any number of bays can be run on identical yarns.



A close-up of the full-bobbin supply bins which are fixed to the machine, one bin for each nine winding units. The removable empty-bobbin boxes are shown on the floor below, also arranged so there is one box for each nine units. Note box location guides.



A close-up of several full-bobbin bins showing how dividers can be used to mark off separate runs. Labels tell contents.

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Carbanthrene Golden Orange 4R Double Flakes
Carbanthrene Golden Orange RRTD Flakes
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Carbanthrene Red FBBD Double Flakes
Carbanthrene Red G2B Double Flakes
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Carbanthrene Yellow PG Double Flakes

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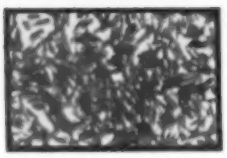

Non-dusting flakes of Carbanthrene Red FBBD, photographed same size, illustrate their unique form.

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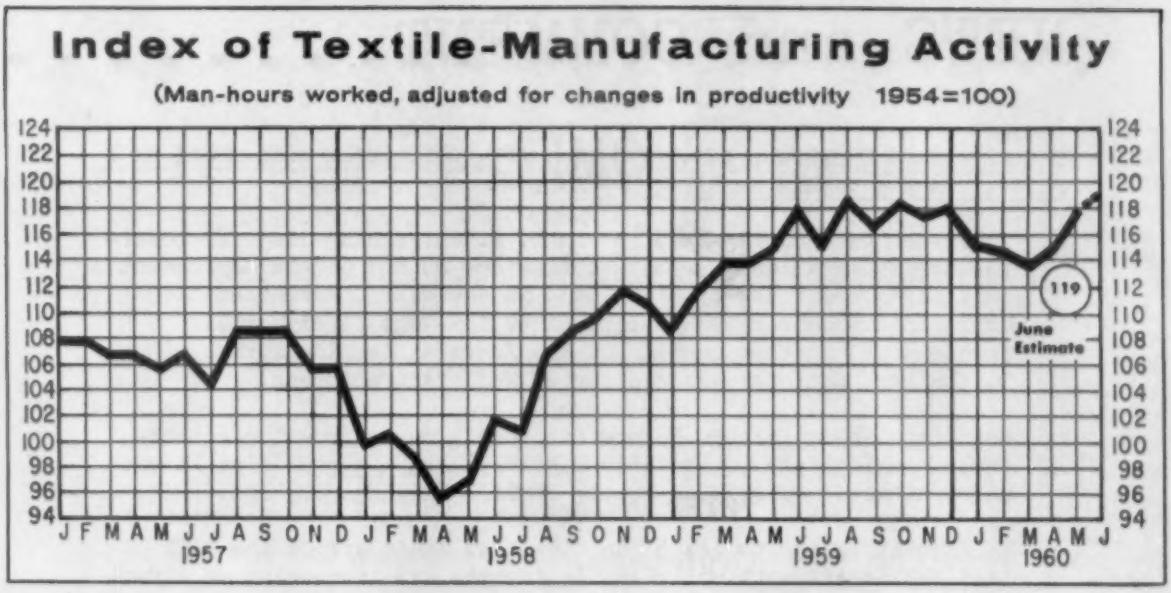

High Sales Hopes

Furniture, rug, and draperies sales cannot be far behind the new surge of homes that the recent relaxation of tight money has made possible. The outlook for housing has improved greatly—mainly because mortgage financing is less costly today than it was just a few months ago. Money was so tight at the beginning of the year that economists were predicting a sluggish market for new home construction. But now housing demand is freshening, and the expectation is for demand to remain strong not only for housing itself, but for the many textile materials and products that go into home furnishings.

The general outlook for the second half of 1960 is quite bright. Gross National Product should soar to a rate of $515-billion, with consumer-goods purchases playing a central role in pushing the total to that record level. Recent surveys of consumer intentions indicate that consumers expect to boost their spending not only for housing, but for durable goods, as well.

Key statistic in helping economists relate intentions to deeds, of course, is installment credit. It's heading up. Then, too, personal income is rising because of increasing employment and dwindling unemployment.

Another hopeful sign for the textile industry is the increasing proportion of personal income that consumers are laying out for apparel.

Adding it all up, a new spurt in housing, strong demand for consumer goods (backed by high personal income), and more interest in apparel points the way to a healthy second half for textile men in 1960.

Figures of the Month

TEXTILE INDUSTRY INDICATORS

	Latest Month	Previous Month	Year Ago
Textile World's Exclusive Index (chart above)	118	115	118
Employment (thousands)[1]	956.3	954.8	965.5
Production Workers (thousands)[1]	863.1	861.6	874.2
Weekly Earnings[1]	65.85	63.76	63.99
Hourly Earnings[1]	1.63	1.61	1.58
Weekly Hours Worked[1]	40.4	39.6	40.5
Production Index (1957=100)[2]	126	127	119
Wholesale Price Index (1947-49=100)[3]	96.3	96.3	94.9
Manufacturers' Sales (million $)[3]	1276*	1203	1253
Manufacturers' Inventories (million $)[3]	2704*	2674	2482
Inventories-to-Sales Ratio	2.12*	2.22	1.98
Exports (million $)[3]	155.6*	164.4	84.0
Imports (million $)[3]	101.7*	118.0	97.6
Stock Price Index (1941-43=10)[4]	27.34	27.63	29.47
Failures (number)[5]	5	4	2

NATIONAL INDICATORS

Industrial Production (1957=100)[2]	110	109	109
Consumer Price Index (1947-49=100)[1]	126.4	126.2	123.9
Wholesale Price Index (1947-49=100)[1]	119.7	120.0	119.9
Civilian Population (millions)[6]	177.7	177.4	174.1
Unemployment (millions)[6]	3.4	3.7	3.4
Employment (millions)[6]	67.2	66.1	66.0
Personal Income (billion $)[3]	399.4	397.8	381.3

*April. Otherwise, latest month is May.

1. Bureau of Labor Statistics; 2. Federal Reserve Board; 3. Department of Commerce; 4. Standard & Poors; 5. Dun & Bradstreet; 6. Bureau of the Census.

NEWS and COMMENT. . . . . .

THE DEBATE ON TRAFFICS, IMPORT QUOTAS, AND WORLD TRADE RUNS ON AT HIGH PITCH. SAMPLE COMMENTS OF THE MONTH:

Inclusion of wool blankets in the U. S. bargaining list for possible tariff reductions (when negotiations on the General Agreement on Tariffs and Trade open in 1961) is a wholly unwarranted open invitation from our own government to low-wage foreign mills to invade still another section of the American textile market. (Hugh G. Chatham, National Association of Wool Manufacturers)

Mounting labor costs in Europe eventually may narrow the gap between American and European soft goods. But the gap is still with us right now. (Gerrit J. Popma, Textile Banking Co., Inc.)

It is distressing to learn that textiles again are on the GATT list for tariff cutting. Textile imports are increasing at a fantastic rate under present tariffs. They need no additional spur. (J. A. Chapman, American Cotton Manufacturers Institute)

Tariffs are levied primarily to protect jobs. But jobs cannot be created out of thin air. They must stem from a profitable operation that can hold its own against world competition. This we can accomplish chiefly through investment in more efficient machines to bring our costs into competitive range. We cannot build our future on tariff protection. (H. B. Humphreys J ., United States Rubber Co.)

Imported men's wear from Asia is not so much a threat as a challenge to the industry on this side to produce better merchandise. Our industry, manufacturers and workers, needs more push rather than protection. Other countries are beating the United States and Canada out of world markets not by price but mainly by quality. (Fred H. Bell, Simpsons-Sears Ltd., Toronto)

OVERSEAS, TEXTILE ACTIVITY KEEPS MOVING AT A FAST CLIP. SAMPLINGS FROM THE NEWS OF THE MONTH:

East Germany--TEXTILE WORLD's Berlin correspondent Sep Strobol reports that in 1961 textile mills in Red Germany will turn out 58.3-million square yards of fabrics vs. 29.3-million in 1957; 360-million of cotton and cotton-type textiles vs. 259.5-million in 1957; 7.8-million of carpets and rugs vs. 4.7-million in 1957.

Great Britain--Cotton-textile output has increased in the past year though the industry's workforce declined, says McGraw-Hill's London Bureau. Reason: sustained investment in equipment. March 1960 figures: 15.5-million pounds of yarn (13.6-million a year earlier) and 38-million yards of cloth (35.4-million a year earlier).

Poland--F. H. Baer, TW's correspondent in Vienna, reports annual outlay of $500-million by Poland's state textile industry to lift output of cotton and wool textiles.

Yugoslavia--Courtalds Ltd. and its wholly owned subsidiary Luna Ltd. have signed a $5.6-million contract to supply plant and machines for producing acrylic fiber. Production is scheduled for 1962, says McGraw-Hill's London News Bureau.

AMERICAN STANDARD L22 GOT THUMBS-DOWN FROM ONE QUARTER, QUICK SUPPORT FROM OTHERS. (L22 ANNOUNCED BY AMERICAN STANDARDS ASSOCIATION IN MARCH, COVERS FABRICS DESTINED FOR SOME 75 END USES.)

The board of directors of Textile Fabrics Association representing cotton converters, unanimously adopted a resolution advising TFA members not to comply with L22 and to "continue selling their products under existing practices." Said TFA's bulletin to its members: "It is the garment manufacturer's responsibility to select fabrics that meet his own specifications for the garment intended and to test the fabrics to determine whether they meet his own end use."

Textile Distributors, Inc. (membership includes converters, yarn producers, printers, dyers, finishers, and others) immediately countered with a resolution endorsing L22 in principle and urging its members to apply the standard wherever practicable or desirable. Said TDI's resolution: "Application and implementation of such standards by all segments of the textile industry will serve to promote the welfare of the textile industry and the best interests of consumers.

Still more support for L22 came from the board of directors of the National Retail Merchants Association, which formally endorsed the standards. NRMA was active in codifying and promoting L22 from the outset.

Straws in the wind: Forecasts for 1960 indicate sales of textile machinery may range anywhere from $407- to $500-million--in any event well above 1959's figure of $400-million . . . Machinery shipments are more than double a year ago (Whitin Machine Works) . . . Unfilled orders are the highest in five years (Draper Corp.) . . . Backlog more than 30% ahead of last year (Roberts Co.) . . . J. P. Stevens Co. in most recent quarter reports earnings at $4.6-million after taxes, net sales 13.6% ahead of last year . . . Beaunit Mills reports working capital on March 31 at $31.2-million vs. 28.7-million a year ago . . . Directors of The Kendall Co. propose a 2- for-1 stock split and a 20% dividend boost. . . A Burlington Industries executive says the industry has improved its inventory controls and moved into stronger hands and that it won't overproduce.

WASHINGTON OUTLOOK . . . . .

While domestic textile-industry representatives busied themselves in Washington impressing the Congress and the Administration with pleas for additional protection from imports, politicians prepared for the conventions at Los Angeles and Chicago this month and for platform decisions on trade policy.

Industry spokesmen are aiming to get in their licks well in advance of the forthcoming negotiating session under the General Agreement on Tariffs and Trade (GATT) at Geneva early next year.

Cotton and woolen textiles are not on the tentative list of items on which U.S. negotiators are prepared to offer new import concessions in return for foreign concessions. At public hearings before the tariff commission and the inter-agency committee for reciprocity information this month and next, domestic mills and textile unions will oppose adding numerous man-made and silk fibers to the "offer list."

Meanwhile Sen. Everett Dirksen (R-Ill.) is calling for the establishment of a 12-man industry-advisory commission to review U.S. trade policy and make a report in a year's time.

Divergent views on trade policy still strike sparks among protection and free-trade partisans, but the political party planks hammered out at Los Angeles and Chicago this month are not expected to dwell on trade policy as a major campaign issue. For the fact is that both parties are internally divided between expanding international commerce to boost U.S. exports, and providing specific protection for domestic industries against imports.

But the men in charge of drafting both Republican and Democratic platforms can be characterized as freer traders. Balancing the views of the platform writers will be the memory of a series of "grass-roots" hearings on platform planks through which domestic industries have made their views felt. Although no major trade legislation or Administration policy decisions are up for vote in the year ahead, the issue is sure to be argued in the campaign--at least in a general way.

Sen. Lyndon Johnson (D- Tex.) has taken a stand on trade policy. He has called the Administration's approach a "horse and buggy" technique. If nominated and elected, Johnson has said he would prefer a man like Sen. Robert Kerr (D-Okla.) in charge of trade. It was Kerr who sponsored a resolution expressing the view that the United States should not offer further tariff cuts.

Sen. John Kennedy (D-Mass.), on the other hand, follows a liberal trade line--but stays close to the problems of the New England mills. Vice president Nixon, Gov. Rockefeller, Gov. Stevenson, and Sen. Symington have all been identified with more foreign trade, also.

Solace for mill management comes from the recent Commerce Department's experimental program to forecast inventory buying from three to six months ahead. If textile mills think they have problems with violently fluctuating inventory, the Commerce survey indicates that it's a disease without ready relief. Seems firms change their inventory plans fast--and with less accuracy--than capital-spending plans. And firms typically have trouble assessing true inventory values, the survey adds.

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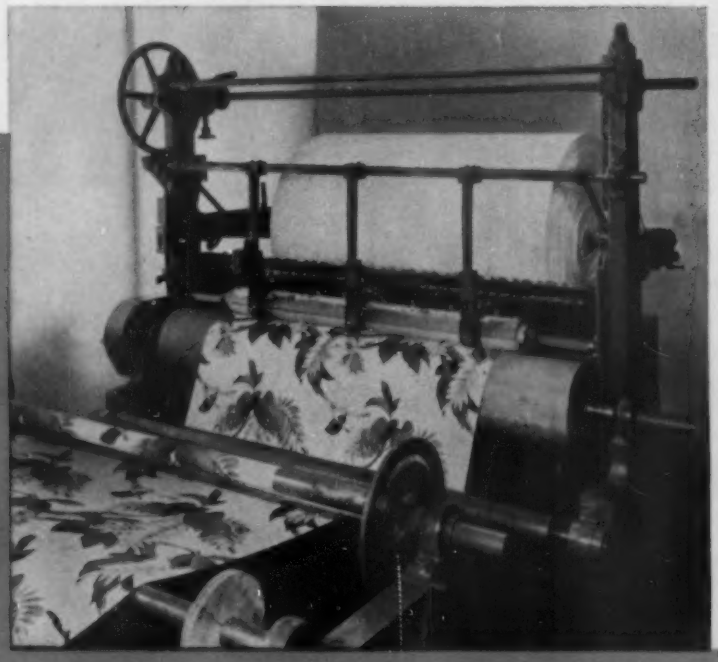
10. Combined materials such as foam rubber combined with various types of fabrics and films.
11. Resin-cured and other oven-cured materials.



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Now featuring: automatic transfer, push-button control cut-off, hopper feed for cores. Can be operated center-wind, surface-wind, or both at same time. Completely pneumatic in operation. Can be used in conjunction with seam detector, yardage meter, pre-set yardage control.

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Sonoco 3°30′ cones are typical of the dependable products manufactured by a fully integrated company with 60 years' experience in creating and producing all types of paper textile carriers. *Only Sonoco,* in its field, provides the necessary knowledge, skill and capacities to meet the ever-changing techniques of the textile industry. *Let Sonoco experience help you!*

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CIRCLE 26 ON READER SERVICE CARD

New Fundamental Chemical Discovery Creates A

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New noncongealing Mira-Film Acetate Gum—developed especially for synthetics—gives noticeably superior adhesion. Forms clear, tough, flexible film that reduces warp stops, shedding, fuzz balls. As much as 2% better weaving efficiency demonstrated in actual mill tests!

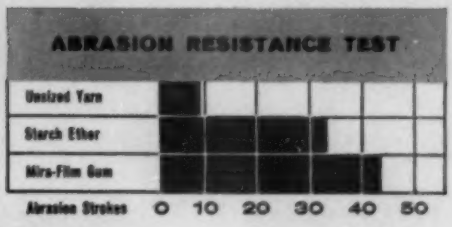
Now, after over two years of intensive research, the A. E. Staley Mfg. Co. announces a new concept in the sizing of acetate, viscose, and other man-made fibers—through the use of Mira-Film Acetate Gum. Made by an exclusive process, so unique that a basic process patent has been applied for, Mira-Film is available in a *complete* range of viscosities.*

Mira-Film is particularly outstanding in applications with spun synthetics and their blends. For example, its chemical affinity for acetate yarns results in noticeably superior adhesion. And Mira-Film forms a tough, flexible film with increased abrasion resistance. Mill tests on a 90/10 Viscose/Acetate blend produced a 1% to 2% improvement in weaving efficiency.

More effective protection greatly improves weaving efficiency. Reduces breakage, shedding, fuzz balls and matting on drop wires . . . virtually eliminates thin spots. Cuts costly down-time.

Staley's exclusive development sets a new high, too, in uniformity . . . permits a degree of process control heretofore unattainable. Thus, Mira-Film Gum has minimum variation in viscosity or other physical properties, from bag to bag or from carload to carload.

Why not get all the facts about new Mira-Film Gum? For further information, see your Staley Textile Representative at the branch office nearest you or write today to: A. E. Staley Mfg. Co., Decatur, Ill.



*Mira-Film is one of a series of new products with a broad spectrum of characteristics, made possible by this new Staley development.

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3. Can be used at lower size box temperatures (120° F)
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5. Faster cooking—only 30 minutes required at normal concentration
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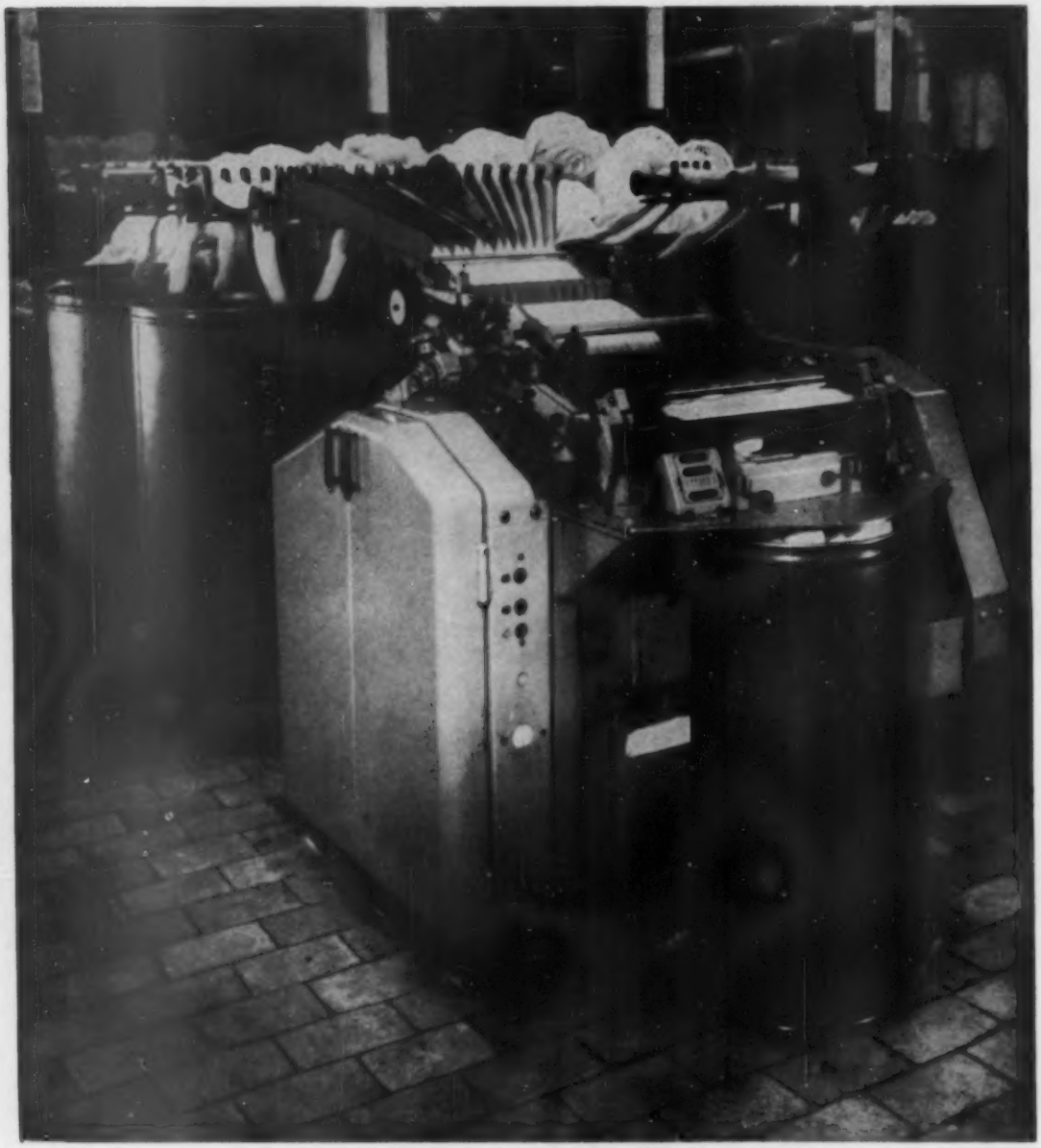

OUTSTANDING for ready accessibility of all operating parts (including cylindrical comb) and for remarkable cleanliness of product. Settings made quickly.

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balanced driving power pays off

Crushing rock for concrete block is, at best, a tough job. Stone dust and flying rock particles create unusually severe operating problems. (Our photographer actually found in-action photographs impractical because of the severity of these conditions.) Says Mr. Charles P. Lower, Jr., works manager of Bethayres Concrete Products, Bethayres, Pa., "The crusher is probably one of the toughest applications that can be found for any belt."

It is estimated that each of the six C-105 U. S. Royal V-Belts on the motor-to-crankshaft drive travels a distance of approximately 120,000 miles a year. Yet despite the severe abrasive atmosphere and the "occasional jamming" that takes place, these "U. S." V-Belts last *many years*.

The "balanced driving power" built into every U.S. Royal V-Belt . . . by specially developed equipment that automatically controls dimensions, weight, density, toughness, and tension members to give unequaled smoothness and length stability . . . has proved its value time and time again under every conceivable operating condition.

SEE HOW BALANCED DRIVING POWER CAN BENEFIT YOU BY CONTACTING YOUR "U. S." POWER TRANSMISSION DISTRIBUTOR FOR THE STOCKS AND SERVICE YOU NEED.

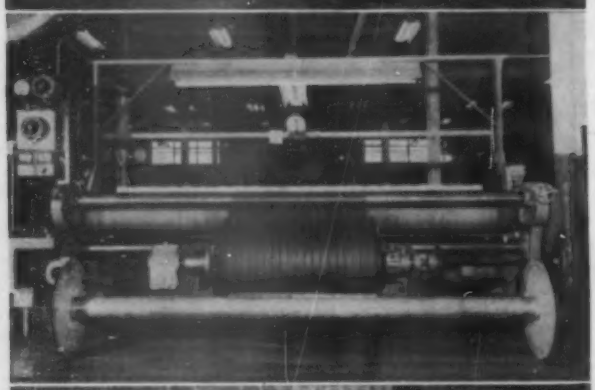
U. S. Royal V-Belts and engineering assistance for these drives supplied by "U. S." Distributor Lindsay-Oberholzer of Philadelphia, Pa.

Mechanical Goods Division

United States Rubber

WORLD'S LARGEST MANUFACTURER OF INDUSTRIAL RUBBER PRODUCTS

Rockefeller Center, New York 20, N.Y. In Canada: Dominion Rubber Company, Ltd.



THE COCKER GH SLASHER VERSATILE EFFICIENT

Shown here are several views of part of a Cocker 9 cylinder GH Slasher installation at Swift Manufacturing Company, Columbus, Ga.—one of America's most versatile mills. These slashers operate on Acetate, Rayon, Nylon, Cotton and blends—stripes, solid colors, as well as greige goods.

The second picture demonstrates the extreme flexibility of the Cocker GH Slasher—accommodating beams from 36 inches to the 128 inch beam shown in front of the machine—with no projecting spindles. Note also, the convenient control panel.

Shown clearly in the third picture is the revolutionary Cocker Torque Tube Drive* which eliminates troublesome belts, chains, sprockets, etc. This greatly reduces maintenance and simplifies changing beam widths.

The lower picture shows the cylinder section and two Model DA Size Boxes.

Due to especially heavy warp construction, maximum speeds on this particular installation are approximately 100 yards per minute. In other mills, Cocker GH Slashers are operating at speeds up to 184 yards per minute on lighter constructions.

We believe that the new Cocker Model GH Slasher is the most efficient and versatile slasher in the World. Let us give you full information.

*Pat. Pending

COCKER MACHINE & FOUNDRY CO.

IN CANADA:
Contact W. S. Clark
Montreal, Canada
Oxford 7-2242

IN MEXICO:
Ing. J. Via, Jr.
I. La Catolica 45-911
Mexico, D. F.

PLANT & OFFICES
at Ranlo, N. C.
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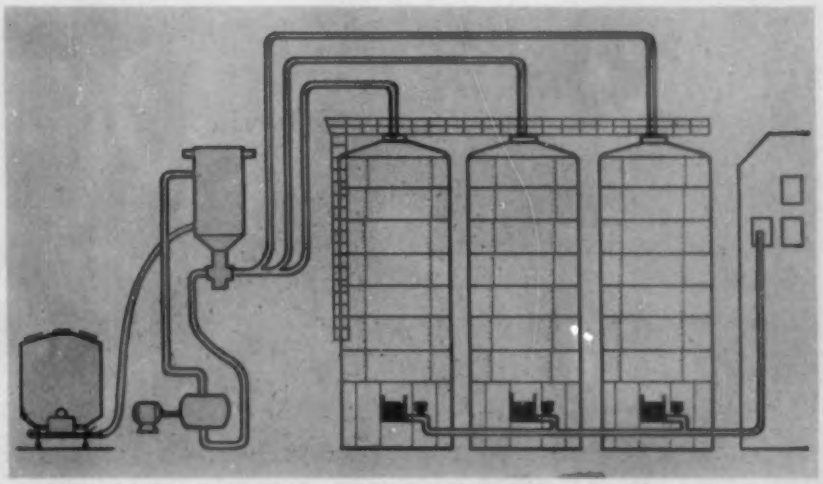
WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

Here's a "TRIPLE-THREAT" to the high cost of handling bulk starch



Here's a typical vacuum-pressure system for Permaglas Storage Units. A. O. Smith distributors have the "specialized" know-how to plan and help solve your bulk materials conveying problems.

Permaglas® *Storage Structures ...mechanical "sweep-arm" bottom unloader ...pneumatic conveying system*

Permaglas Mechanized Storage Structures offer a "dynamic challenge" to the higher cost, conventional methods used in handling and storing of bulk materials. You can realize lower costs in your processing operations when *slow and expensive* methods are replaced with *Permaglas* Mechanized Storage Units. Equipped with the *exclusive* "sweep-arm" mechanical bottom unloader, they can be incorporated into an efficient pneumatic or mechanical conveying system. Here's how you benefit:

- A completely enclosed, "push button controlled" bulk materials handling system is now possible.
- Incoming "bulk" cars or trucks can be unloaded pneumatically or mechanically directly into the *Permaglas* Storage Structure.
- The mechanical "sweep-arm" bottom unloader discharges bulk materials directly into the conveying system to the process lines.
- This means substantial savings in labor, eliminates bags, bins, barrels, handling equipment and the maintenance of this equipment . . . eliminates material losses by breakage or spillage . . . helps prevent hazardous accidents.
- *Plus this exclusive feature. Permaglas* Storage Structures are glass-fused-to-steel construction both inside and out. Makes possible sanitary, easy to clean bulk materials handling systems. Eliminates corrosion, safeguards products from contamination and infestation. Reduces structure maintenance to a minimum.

This low cost way to handle and store bulk materials can be accomplished with minimum capital investment. Certainly it is worth further investigation. Mail coupon for details.

Through research . . . a better way

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CORPORATION
HARVESTORE PRODUCTS DIVISION
KANKAKEE, ILLINOIS
A. O. Smith International S.A., Milwaukee 1, Wis.

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Permaglas Storage Units, Dept. TW-70
Kankakee, Illinois
Send me free Permaglas Mechanized Storage Unit Bulletin MU-107.

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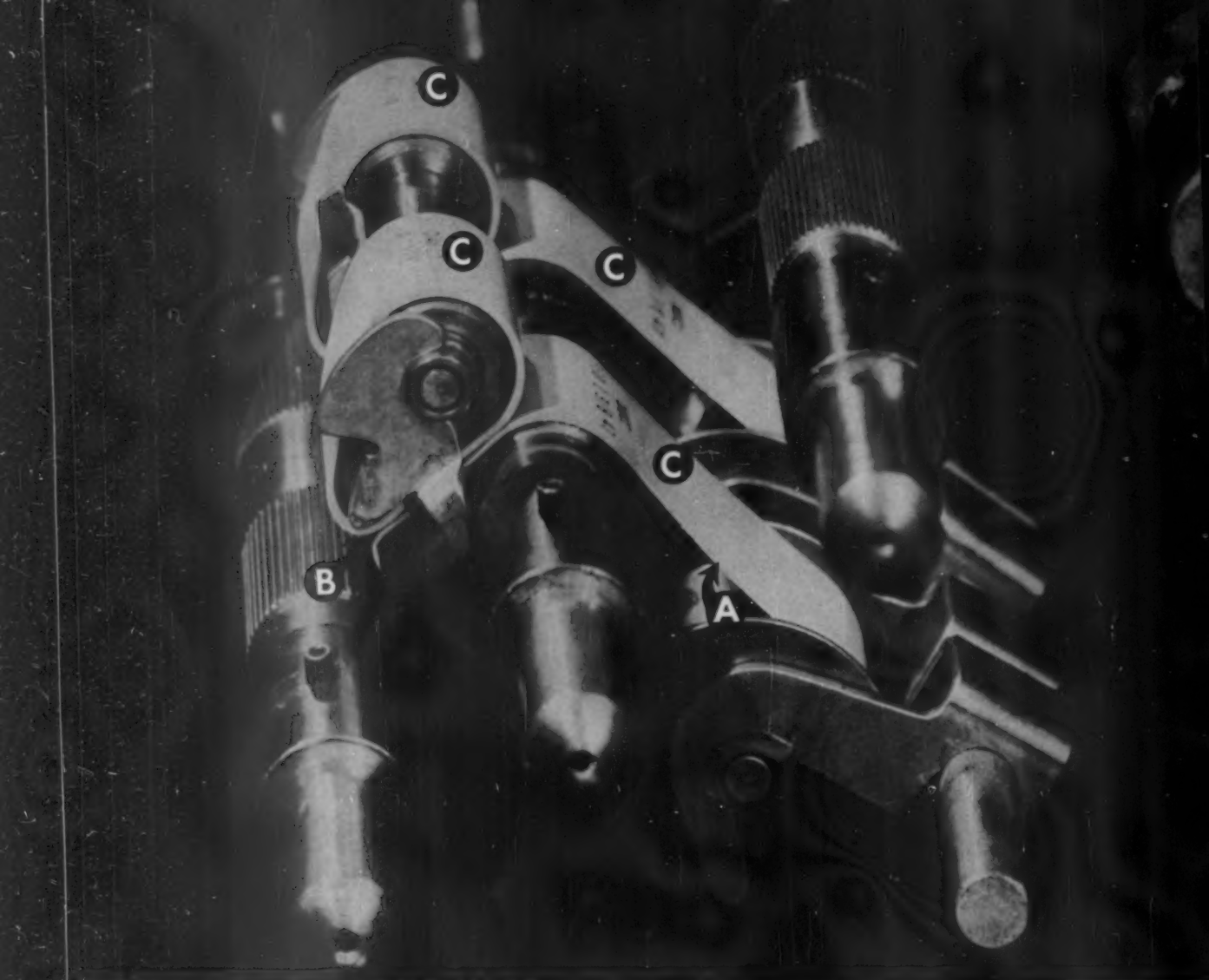
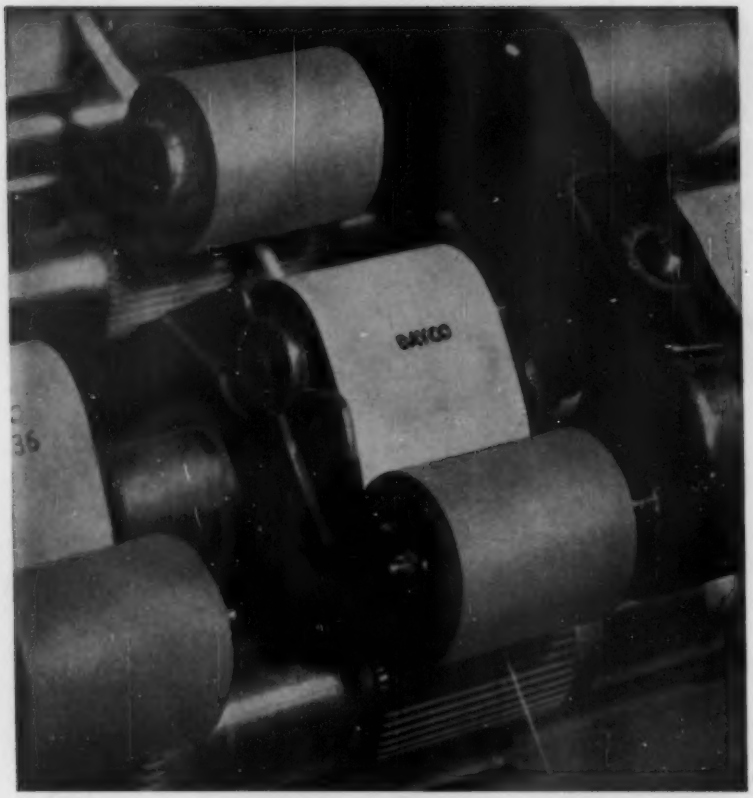
Title.....
Company.....
Address.....
City.....Zone....State.....



ACTUAL WORKING MODEL of long-apron system shows: (A) Patented embossed surface for precise coefficient of friction and abrasion-resistance formulated to last for years: (B) Unmatched flexibility at nose-bar for consistently smoother performance and top quality yarn: (C) Guaranteed yarn control due to a cleaner spinning outside surface.

EXCLUSIVE . . . patented by Dayco . . . your only source for this important friction-right improvement in aprons that made possible lower power and increased production. It's another example of Dayco's continuous research program to increase economies and production.



A COT FOR EVERY PURPOSE—as well as a virtually all-purpose cot! That's the great Dayco story to meet every need for surface texture, densities, dimensions, sizes, kinds. Whether man-made fibers or mixtures are your spinning problem, Dayco research in the laboratory and in the field guarantees consistently better results and greater savings.

NEW RECORD-BREAKING SPIN-AND-WEAR PERFORMANCE

with Dayco on any apron system

For super-quality yarn—consistently, month after month—nothing matches Dayco's patented Embossed Apron for long-apron systems. Here's super-smooth drafting action—unequalled flexibility and precision friction surfaces on both sides to meet any and all conditions. No more tucking or jamming at the nose-bar . . . no more ozone breakdown . . . no more abrasive problems for months and months.

Improve your yarn quality . . . up your spinning performance with the pioneer and leader in the field —Dayco!

Ask your Dayco Representative to set up a trial installation. Phone or write Dayco Textile Products Co. (Formerly Dayton Rubber Co., Textile Division) 401 S. C. National Bank Bldg., Greenville, S. C.

Dayco TEXTILE PRODUCTS CO.

Division of Dayco Corporation

OVERSEAS PLANT: THE DAYTON RUBBER CO. LTD., DUNDEE, SCOTLAND

CIRCLE 23 ON READER SERVICE CARD

Dayco All-Purpose Cots exceed 300,000 spindle-years WITHOUT REBUFFING

300,000 spindle years without the need of the usual periodic buffing! That's the 2½ year record from just one 120,000 spindle plant using Dayco's ALL-PURPOSE SG-60 cots.

Add to this amazing wear record the great volume of high-quality yarn coming off the production line and you can see the outstanding efficiency of the versatile SG-60.

But with more than 70 different fibre combinations running now on production lines, a wide variety of top-quality cots must be used. Now, in plant after plant, Dayco has proved its laboratory tests on its full range of cots in actual production. Dayco offers a cot for every purpose. Each one is specifically designed for outstanding performance in a specific production situation with just the precise coefficient of friction. Dayco Cots deliver more yarn... better-quality yarn in mills everywhere, year in and year out.

This is just another example of Dayco service in the cot and apron field. Dayco's broad, continuous research and laboratory facilities have brought the most practical answers to the textile industry's spinning problems. Dayco's discoveries in precision compounding have resulted in closer precision tolerances than any other on the market.

Dayco research sought and came up with the answers on super-drafting at lower horse-power. Dayco's laboratory maintains quality controls on Dayco's own production line that have no match in its field.

RÜTI

High speed looms, sizing machines and warpers for versatility, quality and top performance.

Now available in the USA through H. J. Theiler Corporation., Ashmont Ave., Whitinsville, Mass.

Ruti, specializing exclusively since 1842 in weaving mill equipment, will show four of its extensive line of high speed looms at the ATMA Exhibition at Atlantic City.

4×1 automatic loom with bobbin container for fancy fabrics. 1×1 high speed loom with Unifil. 1×1 automatic loom with box container for weaving quality fabrics from a wide range of yarn counts. 4×1 automatic bobbin changing loom for silk and synthetic fibers.

VSM Swiss Textile Machinery Group

RUTI MACHINERY WORKS, LTD.
Formerly Casper Honegger
Ruti-Zurich, Switzerland.

YOU CAN USE A LARGER SHAFT WHEN YOUR "SPECS" READ HYATT

Need a larger shaft without disturbing envelope dimensions? Take advantage of a Hyatt option by omitting the inner race. You can add the thickness of the Hyatt inner race to the shaft and let the rollers operate directly on shaft. Just be sure that the shaft is suitably hardened and ground. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

Replacement bearings available through United Motors System and its authorized bearing distributors.

HYATT HY-ROLL BEARINGS

IN ROLLER BEARINGS HYATT IS THE WORD FOR GM RELIABILITY

CIRCLE 35 ON READER SERVICE CARD

Garden Supplies
ELECTRIC CLOCK
GARDE
GI
GLOVES
GARDEN

How to put a show on the road

Charles "Chuck" Newman is an old hand at packaging showmanship. And an extraordinarily versatile one, too. As Union-Camp's Art Director for 26 years he's helped develop successful package designs for a wide variety of products.

"Chuck" and his talented team operate on the premise that every shipping container should be a traveling salesman for the products it carries as well as for the company that ships them. And there's certainly no lack of prospects. The average corrugated box, in its travels, meets hundreds of people and makes thousands of impressions. Yet its valuable billboard space often is neglected.

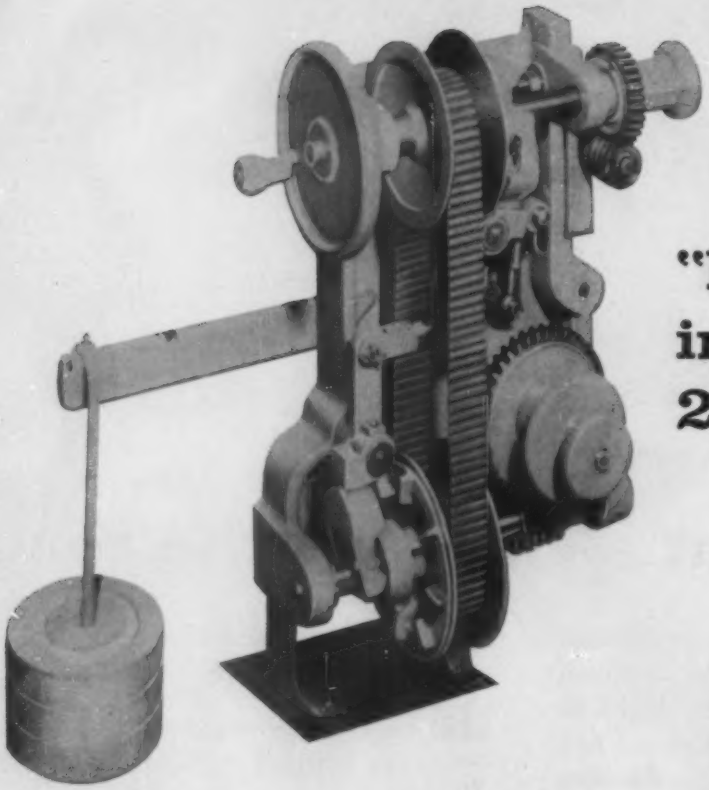
Distinctively designed boxes, as "Chuck" has demonstrated over and over, can work in dozens of ways. To merchandise a brand name—help create an image or personality for the product. Or, to tie-in with special or seasonal promotions. To dovetail with other advertising. To develop dealer preference by simplifying and speeding identification in inventory control. And through the combination of structural and visual design, to serve as eye-catching, easy-to-assemble display pieces—right at the point of sale.

But remember, designing art and print copy for corrugated boxes is a job for experts. It's an exacting medium to work with. How well your design succeeds depends, to a great extent, upon how well the artist knows the intricacies of the process and how to get the most out of it. "Chuck" Newman has a lifetime of experience in getting "the most" out of paper packaging and his staff is trained to his own high standards.

Your Union-Camp corrugated box representative is your passkey to more effective use of printed corrugated boxes. He'll be happy to show how they can be of value to you. A note on your letterhead will bring him to your office.

Union Bag-Camp Paper Corporation · 233 Broadway N.Y. 7, N.Y.

Plants: Savannah, Georgia · Trenton, New Jersey · Chicago, Illinois · Lakeland, Florida · Spartanburg, South Carolina · Jamestown, North Carolina
Subsidiaries: Allied Container Corporation, Dedham, Massachusetts
The Eastern Box Company, Baltimore, Maryland.



"Pays for itself in less than 2 years..."

(FROM A CUSTOMER)

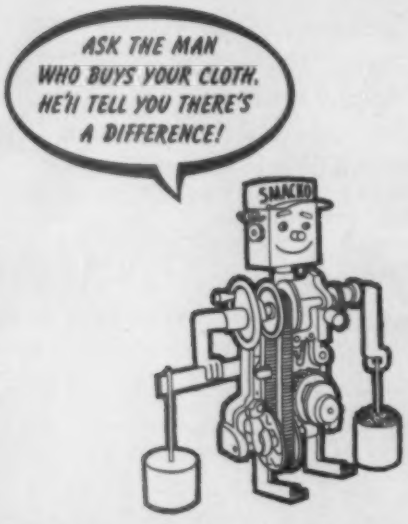
Hunt Let-Off®

That's what mill men say about the Hunt Let-Off. How? By increasing first quality production, lowering labor costs and decreasing seconds.

This positive Let-Off automatically maintains constant tension on looms from full to empty beam, thus decreases downtime for "fixing." The Hunt Let-Off eliminates wavy cloth and reduces set marks. It increases loom production while lowering weave room and cloth room costs. Thousands are now in operation on looms weaving plain and fancy cottons, synthetics, woolens and worsteds.

Ask your customer about the better quality cloth from looms equipped with the Hunt Let-Off.

Equip your looms with the Hunt now! And be sure to specify the Hunt when ordering new Crompton and Knowles and Draper looms.



WRITE, WIRE OR PHONE

SOMACO

SOUTHERN MACHINERY COMPANY

Box 3217-Station A, 5806 Augusta Road, Greenville, S. C., CRestwood 7-2116

From Two Trips, Four Urgent Needs

Luck was with us two ways in May:

• We spent three days in Florida with the Georgia Textile Manufacturers Association. There we heard William Reid (president of Riegel Textile Corp.) tick off some of the milestones in the advancing technology of our favorite industry.

• We spent a week at Atlantic City, much of the time looking in wide-eyed wonder at the equipment this industry has at its command.

At Atlantic City we saw how research and development pays off—even on limited spending. In Florida we learned that the industry must step livelier—much livelier—just to stay even with competing industries in the years ahead.

Stepping livelier, we believe, is critically important—critically important on an industry-wide basis. Why industry-wide? Because research and development takes big money. Because it takes big thinking and planning. And because the hope of this industry lies just where Bill Reid said it lies. It lies in uniting against the common enemy—that is, competition from outside industries.

What's needed to pull ahead of this outside competition? We see these urgent needs:

1. More money. Right now, for research and development, the textile and apparel industries are spending only 0.2% of sales. That's $34.6-million. In percentage of sales the petroleum and coal industries are spending nearly five times as much; the rubber industry, nearly seven times as much.

2. Clear targets. Fat ones, where the payoffs are big. Breakthroughs come only when targets are clear. Proof? The swift advance of rocketry and space technology, where aims are clear and success is urgent.

3. Open communication. Ignorant of what's going on elsewhere, a dozen different labs can be trying—individually, simultaneously, and secretly—to invent the wheel. Information must move two ways—outward from the individual mill into the industry, and inward from the industry into the individual mill.

4. Central direction. This is the best way to plan the big goals, chart a sure course, and eliminate waste motion. It means bringing all segments of this diverse industry (including machinery manufacturers) together into a single, giant research and development organization devoted to the common cause—submerging differences, pooling resources, and levying a continuing assessment on individual company members for the joint support of the over-all effort.

A big challenge? Sure. Is the industry big enough for the challenge? We think it is.

L22—or What?

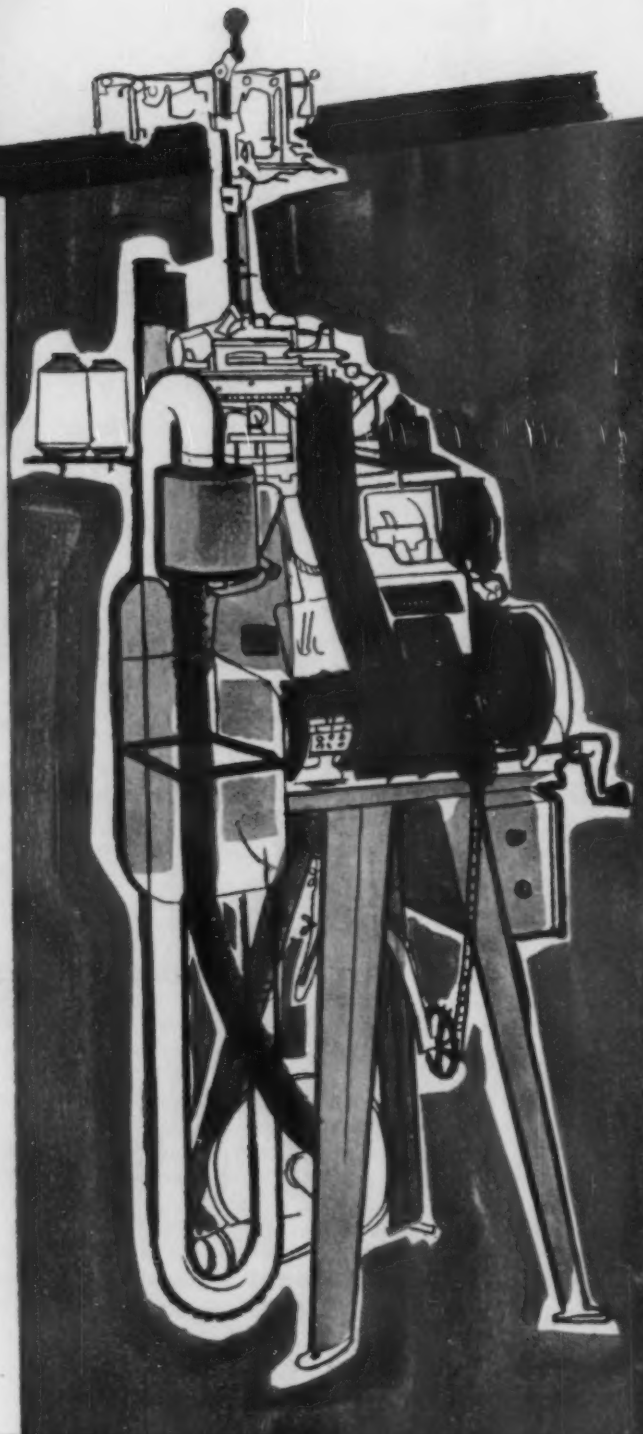
We note with some dismay that a large group of textile businessmen has washed its hands of American Standard L22. This document, so bravely launched just a few months ago (TEXTILE WORLD, April 1960, page 8), specifies standards for fabrics destined for some 75 end uses. It's the fruit of toil and time given by groups who saw a need for uniform standards.

Now the last thing we want to do is to prolong an argument or widen a rift. We're sure the dissident group has good reasons for its position. Yet we can't down the temptation to raise this question:

"If not L22, then what else?"

Like petroleum, rubber, chemicals, electrical equipment, and many another industry whose products turn up in a hundred end uses, the textile industry, too, needs uniform standards. Maybe L22 isn't just the right thing. But we venture the opinion that the industry ought to have something better in sight before it throws L22 out bodily. Otherwise, it seems to us, the action is a step backward toward anarchy. And anarchy (with accompanying instability) is one thing this industry doesn't need any more of.

now peak production of the finest seamless nylon stockings



announcing the new "Reading-Booton" twin-feed machine

* 2-feed automatic, highly efficient end trimmer. Trims all ends to a length of from ¼ to ⅜ inch.
* New high standard of fabric quality
* Continuous, high-speed production

The new "Reading-Booton" Twin-Feed Machine opens new profit possibilities in the knitting of ladies' seamless stockings. It gives you twin-feed production, plus amazing simplicity of operation, and trouble-free performance.

New features developed by Textile Machine Works for the proven Booton Machine. This new precision machine belongs in your production planning. Backed by our world-wide service organization. You'll want to see the new "Reading-Booton" in operation before you buy any seamless machine. Call us today.

TEXTILE MACHINE WORKS

READING, PENNA.

CIRCLE 40 ON READER SERVICE CARD

Absentee, accident repeater, bellyacher, gossip, odd ball—maybe you've got these five common types of trouble-makers in your mill. Here's help when you deal with . . .

YOUR PROBLEM EMPLOYEES:

1. How to Spot Them
2. How to Handle Them

By AUREN URIS
Research Institute of America
New York City

"YOU CAN KEEP YOUR TEAMWORK. I've never yet worked on a team. And I'm not about to work on one now." That was how Rufus M. (one of the highest skilled mechanics the ABC Knitting Co. ever had) sounded off to his new supervisor.

Every company has men like Rufus M. on its roster. But few companies know just what to do about them.

The trouble is that the good employee and the problem employee often display the same traits, according to the experts. The problem employee is the man you want to spot and weed out. He's the man you want to change (if you can) or get rid of (if you must).

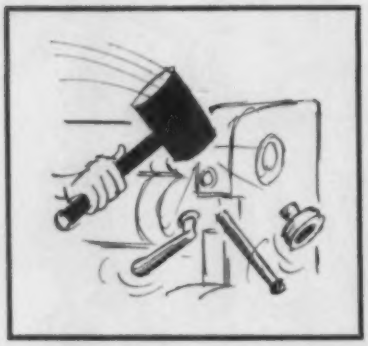
Therefore, the best thing the mill manager can do is to make sure he isn't gulled by false symptoms. The experts themselves aren't quite clear on just where the line is drawn. Some of them will say that the problem employee is a non-conformist—an individual who speaks, thinks, or acts differently from his co-workers. Others argue that the problem employee is a neurotic—maladjusted and surly.

An employee might be any of these things, and still he might not be a problem. Fact is, like Rufus M., he might be one of your very best men.

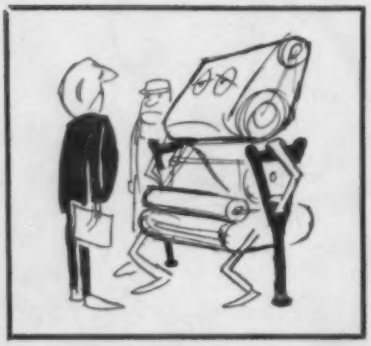
How to tell the difference? One sure way, as sure as a strip of litmus paper in detecting acid: The unique characteristic that identifies the problem employee is that he causes loss.

. . . Turn the page ➡

5 Steps From Incident To Action



1. ACT FAST ON CRITICAL INCIDENTS. This is usually your tip-off. Abnormal behavior often signals the presence of a problem worker. Can you tell if it's serious?



2. PROBE FOR SIGNS OF DAMAGE. Is the loss heavy, significant? Gather facts, data, records, all pertinent information. Do the facts support your evaluation?

Begins on page 41

If you can't demonstrate loss or damage, you simply don't have a bona fide case, regardless of the employee's appearance, behavior, or attitude.

SPOTTING THE PROBLEMS

The loss caused by the problem employee may come about in three different ways. In any single instance, one or more of these may apply:

1. He underperforms in his job. He produces less work than others, or turns out excessive bad work. One way or another, he fails to measure up to the performance standards set for him.

2. He interferes with the performance of others. Take the case of the compulsive talker. He's constantly making the rounds, keeping up a verbal barrage that cuts into the productivity of his teammates. The work they don't produce, the attention to the job they fail to give, are the source of losses.

3. He does damage to the company. This may include intangible loss. Consider the case of the loud-mouthed truck driver who delivers a company's goods. When he turns up on customers' premises, he may seriously damage the image of your organization by his unpleasant behavior. The fact that this kind of damage is intangible does not diminish actual losses that eventually may result.

Two additional elements help identify the problem employee:

. . . The difficulty he causes is likely to persist, or recur. In short, it threatens to become a permanent problem.

. . . There is no simple solution. If there were one, you'd just apply it, and be off the hook.

Note that in the characteristics of the problem employee given above, you have an objective description. By applying it, you avoid the likelihood that you'll fall victim to a supervisor's bias or whim.

THREE KEY QUESTIONS

The supervisor who understands this approach to identifying the problem employee is no longer lost in the fog of confusion. He need only answer three simple questions to establish with reasonable certainty that an employee either does, or does not, belong in the problem category:

- Is he causing loss or damage?
- Is the loss or damage likely to persist?
- Is there no simple solution?

If the answer in each case is "Yes," you have to conclude that the individual under consideration is indeed a problem employee, and requires special attention.

Before getting down to the question of how to handle the problem employee, a few words about his growing prevalence and importance.

THREE NEW ELEMENTS

The term "problem employee" has existed in management's vocabulary for many years, but it's an old problem that's getting newer every day. Several factors are at work today:

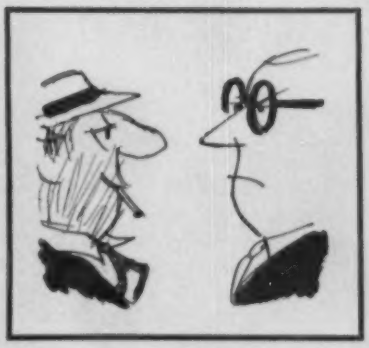
Automation — Technological changes may cause personnel dislocation. This may mean that an old-time employee, performing satisfactorily, is suddenly thrust into an unfamiliar job. He is unprepared for the nature of the work, the standards of performance, and the new pressures upon him. Out of his insecurity and dissatisfaction, a problem employee is born.

Automation also increases the seriousness of the problem represented by the problem employee. He or she is in a position to do a great deal more damage than before. Expensive equipment, a costly product in his charge means his "damage potential" may suddenly increase tenfold.

Tight Labor Market — Many areas of the country are short in specific labor categories. Accordingly, management faces a dilemma. Firing a problem employee is some-

3. STUDY THE WORKER'S JOB HISTORY. What does his record show? What about job changes, safety record, behavior attitudes, and cooperativeness?

4. GET SET FOR POSSIBLE ACTION. Now's the time to ask yourself, "Do I have a case? Do the facts support my position?" If "Yes," you'll have to act soon.



5. TAKE ACTION ON THE PROBLEM WORKER. Now you're at the stage where you'll have to arrive at a definite course. Carry through face to face.

times a sound solution. But firing an unsatisfactory employee and hiring someone who may be no better (because you're scraping the bottom of the barrel), puts a limit to management action.

New Faces—Peter Drucker refers to the era into which we are heading as one requiring the "management of the educated". Many companies hiring staff people today—technicians, more engineers, and so on—know that Drucker's forecast is accurate.

Many of these highly educated people lack work orientation—are unfamiliar with the business scene. The clash between academic background and realities of the business world create conflicts that in turn create problem employees.

COST TO MANAGEMENT

Losses that stem from the problem-employee group are measured in unproductive time, waste, errors, rising reject percentages, and falling production and safety performance.

Intangible losses may far outweigh even the substantial money loss. Customer dissatisfaction, tarnished public relations, depressed morale, may not be easy to assess. But, to the manager with long-range perception, the intangible damage spells ultimate losses that can threaten profitability, and even survival of an entire company.

It can be an eye-opening exercise for management to work out an approximate measure of problem-employee losses. Rough as the figure might be, the estimate can give some idea of the drag on operations represented by this No. 1 human-relations problem. The paragraphs ahead can help you assess your company situation.

TYPES OF PROBLEM PEOPLE

Who are problem employees? A group of managers, meeting at Cornell University for a special one-day seminar, supplied the following list of types:

The absentee
Accident prone
Overly dependent
Hostile
"Professional gossip"
Over-ambitious
Social misfit
Overplaced
Underplaced
Self-glorifying
Argumentative
Insubordinate

The types become more manageable if they're boiled down into basic categories.

The list of types may be added to almost unendingly. But no matter how many types you include, they tend to fall into four categories.

A QUARTET OF DUDS

1. Health—The employee with the bad back or the one who catches cold easily belongs in this group. Also included is the old timer approaching retirement age, with failing physical resources.

2. Outlook—These are the individuals whose abnormal attitudes make them problems. Take the case of employee Joe R. He feels that he has a "perfect right" to chat during working hours. Any attempt on the part of his supervisor to limit his chatter is met with resentment. The supervisor will be told his efforts to control such talk are anything from unfair to being un-American.

The overly-ambitious worker who feels the world is his oyster (and wants to crack it wide open regardless of who suffers) also belongs in this group.

3. Environment—The problem employees in this category have been created by circumstances in their work situation. It may be an uncongenial fellow-worker, a physical working condition, or any one of the dozens of elements that make up the individual's work scene. Some aspects of his job rub him the wrong way.

4. Personality—A certain percentage of people who cause losses

. . . Turn the page

Begins on page 41

because of personality factors. The hostile individual, for example, whose aggressive or destructive feelings are turned loose to do damage on the job, is typical.

The overly-dependent individual also belongs in this category. Generally, the nature of the loss he causes is different from that caused by the hostile person. Frequently, the overly-dependent employee does his damage by requiring excessive supervisory attention. His underpar performance may take the form of mediocre and unimaginative discharge of routine assignments and an avoidance of any task that is new or has challenging elements.

DEALING WITH PROBLEMS

Too often managers lose sight of a significant aspect of the problem-employee difficulty. It is the fact that the problem employee represents a different kind of problem at different organizational levels. For example:

. . . **Supervisory level**—To the supervisor, the problem employee is an immediate and direct challenge. The damage is likely to show up in the department's performance. Low productivity, excessive waste, other typical consequences have an immediate damaging effect on the supervisor's own showing.

In some instances the presence of a problem employee may pose threats to the supervisor's leadership or authority. His relations with others in the work group may suffer. For reasons like these, the supervisor is apt to be the most directly involved.

. . . **Staff**—To the personnel department, the problem employee may be a less immediate problem, but a more serious one. At stake may be a companywide personnel policy, for example. And where problem employees tend to show up in more than minimum numbers, the performance of the personnel department itself may come under fire as a result of the questioning of its recruiting, hiring, training and employee-relations policies.

. . . **Top Management**—To executives at the top, the problem employee is generally thought of as a difficulty that others down the line are being paid to handle. That's why top management tends to be studiously disinterested, except where the problem employee in question is a member of management itself.

However, this generalization has obvious exceptions. The mishandling of a single problem employee can cause a kickback of such serious dimensions that top management may have to step into the picture.

Take the example of an irresponsible shipping clerk whose failure to take his job seriously resulted in frequent customer complaints. After giving the employee half a dozen warnings, the individual's superior decided to let him go. It was a fair but unfortunate decision. The employee's war record and civic activities gave him considerable personal popularity in the community. The clamor that arose quickly reached top management.

The company was finally persuaded to give the employee another chance. Although top management agreed completely with the justice of the supervisor's decision, considerations apparent at the top level prompted the turnabout.

. . . **Employee level**—Employees also have an involvement and point of view about problem employees. It can go either way. Sympathy and identification in one case may lead employees to side very strongly with a problem individual. But when other employees are affected by the behavior or attitude of the problem employee they may render judgments even harsher than those rendered by management.

These differences of viewpoints must be considered in dealing with individual cases. Serious oversights may result when a manager fails to anticipate varying reactions to judgments he makes or action he takes.

"Does your company have problem employees?"

That question was asked of twenty-five executives from as many companies in a recent conference dealing with the problem employee.

"Yes," was the unanimous answer the executives gave.

"Do your companies have a policy for dealing with problem employees?" Their answers:

"No"—15;

"Not sure"—6;

"Yes"—4.

But stranger even than the figures above: Of the four executives who said their companies had a policy, not one could state it!

FOLLOWING POLICY

The question of company policy and the problem employee is probably the least understood of all aspects of this subject. A few minutes digging into the facts involved can shed considerable light in some murky management corners.

The two general policy extremes might be stated this way:

1. "Our company cannot tolerate the losses caused by problem employees. Such individuals must be fired forthwith."

2. "It is our policy to work out a satisfactory job adjustment for the problem employee—at almost any cost."

At this point we get back to the mystery of the executives who asserted their companies had a policy on problem employees even though they could not state what the policies were.

Companies don't have written or explicit policies for dealing with problem employees because each individual represents a unique case. When you examine company experience you find that management arrives at its decision by considering a number of factors. It is the evaluation of these factors that represents practical policy in each case.

Here are some of the factors:

. . . **Loss or damage**—The nature and magnitude of the loss the problem employee is causing is taken into account. The greater the loss, the greater the pressure on management to take remedial action.

. . . **Work history**—The performance, accomplishments, failures, and successes of the individual over the years are examined and evaluated.

. . . **Nature of his skills**—As a practical matter, an employee with

rare or highly desirable skill gets special consideration. The damage caused by an employee who can easily be replaced will be less tolerable to management.

. . . **Family situation**—This consideration is a tribute to the humaneness of the modern corporation: The head of a family with five or six kids will be permitted to get away with a great deal more than a young bachelor.

. . . **Contribution to the country**—Both patriotism and public-relations sensitivity enter here. For example, a decorated war veteran often finds his service stripes insurance against summary dismissal.

Many other factors might be added to the list above. For example, health, or age, or an individual peculiarity might enter into your considerations.

In considering the factors above, management usually realizes they cannot be "averaged." A single factor—such as a man's unique skill—might outweigh all the other factors taken together.

WHAT YOU CAN CHANGE

There are five possible approaches to overcoming the problem-employee difficulty:

1. The employee—The supervisor may attempt to remove the employee from the problem category by bringing about changes in—

. . . Behavior. The perennial latecomer, for example, in some cases can be "cured" by making it clear that he must conform to the same regulations that the others do.

. . . Attitude. The employee who causes trouble by a chip on his shoulder may have his pugnacious attitude diminished by an understanding supervisor who provides the insight that will help the employee understand that his attitude is self-defeating.

. . . Situation. The employee who has become a problem because of a bothersome part of his job may be made a worthy member of the work-group by elimination of the disturbing element.

In some cases the change may be minor, and yet yield major results. An employee who is upset because a new employee has been hired at a higher salary for doing the same work (an unfortunate, but not infrequent, situation in an extremely tight labor market) may return to normal by a just handling of his complaint.

2. The job—There are numerous possibilities that center around the employee's job assignment. For example, if the difficulty is essentially the result of over placement or under placement, a transfer may be indicated. In some cases it is practical to add or subtract job elements that can eliminate the difficulty. And where tailoring the job is not practical, helping the employee qualify for a job for which he is better suited may be the remedy.

In some cases retiring the employee ahead of schedule may help solve the problem of ill health or under qualification.

3. Other Employees—Occasionally, a cure for a problem situation lies in dealing with other employees in the group. Instances of unfair or callous treatment, ganging up on an individual, may call for supervisory intervention. Just what is said or how it is said of course depends on the individuals involved. In most cases one of two approaches gets results:

(a) An appeal to the fair mindedness of the individuals.

(b) An assertion of authority.

4. The Rules—In some companies, company rules, regulations, or policies put an employee into a conflict situation.

A case of this kind came up recently in connection with a handicapped employee. Because of physical disability, the employee, a member of a five-man team, was forced to take more and longer rest periods than permitted other employees. Because the team was perfectly willing for the employee to have this special privilege, and as a matter of fact, because they adjusted their own work pace to accommodate their handicapped colleague, an exception was made, to the satisfaction of all concerned.

5. Supervisory Standards — In certain kinds of jobs, when you speak of an employee's under-performance, you are rendering an opinion. That is, someone (usually the employee's supervisor) feels that on the basis of performance standards he has set, an employee is not measuring up. Where standards of performance are matters of judgment rather than measurement, supervisors may, on reconsideration, decide that what requires changing is not the employee but the standard set for him.

In some instances this may be too-easy an out. The manager must do some intensive soul-searching to make sure that a reassessment of standards serves the ends of justice rather than convenience. Where an instance of a problem employee is solved by an inequitable compromise, management usually has left itself wide open for future troubles.

PREVENTION

The company that is alert to the extensive damage that may result from problem employees can build the strongest preventive by moving in two directions:

Personnel policy—The personnel department must not be pressured into hiring under-qualified people, or in permitting unrealistic personnel practices.

Supervisory practice—Supervisors should be kept from falling into the trap of overinvolvement in the personal problems of workers. Employee awareness is often the best cure for the problem.

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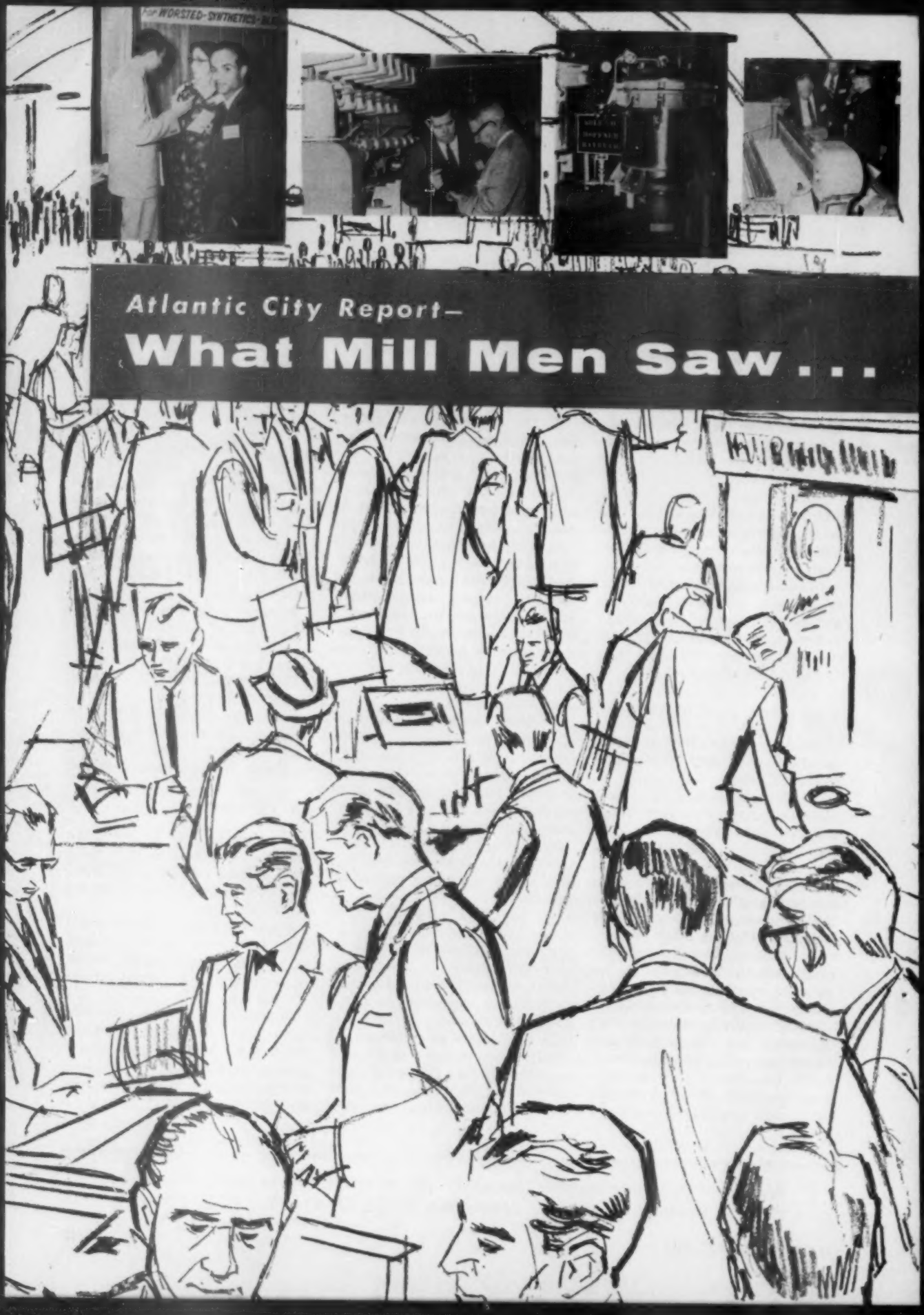
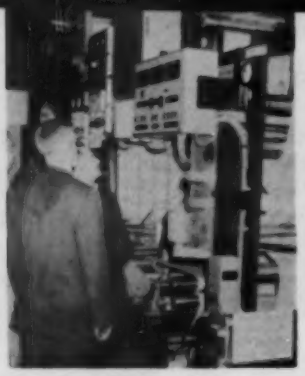


Atlantic City Report—

What Mill Men Saw . . .



Why They Got Excited

"BEST YET." That was the almost unanimous verdict of nearly 17,000 visitors who surged through the doors of Convention Hall in Atlantic City, May 23-27.

Those visitors were mill men from the United States and overseas. They were attending the American Textile Machinery Exhibition—International. They came to see over $30-million worth of textile machinery, equipment, and supplies put on display by 293 American exhibitors and 94 overseas exhibitors—total, 387.

They watched machinery at work. They peered into spinning frames, looms, and finishing equipment. They fingered material in process. They quizzed booth attendants, talked until they were hoarse, walked until their feet ached.

Opinions Stated

What did visitors, exhibitors, and American Textile Machinery Association officials say about the show? How did they measure its impact? Here are sample comments:

"The best show yet. Not as big as the Milan show, but better arranged and not as cluttered up with fringe equipment."

"Never saw so many company presidents—so many high-level people—at a textile-equipment show."

"Look at these people. They aren't just drifting down the aisles. They're stopping to ask questions—to find out things—to see how equipment works and what the new machines will do in their own mills."

"I didn't know textile technology was changing so fast. This industry is really moving ahead."

"These exhibitors are selling stuff right off the floor. Mill owners are grabbing it. They're jingling money in their pockets, and lots of them are spending it right here. And those who aren't spending it here are shopping hard."

"Sure, there are lots of overseas exhibitors here. From 12 countries, in fact. And I'll tell you why we asked them. First of all, we display our wares at their shows in Europe. It's only fair that we invite them here to display theirs. Second, they've got some good stuff and we ought to know about it. Third, we're all competing for the buyer's dollars. Let's put our equipment alongside equipment from overseas—and then let the buyer make up his mind about which is better."

Trends Cited

Did the big show reveal any trends? Does it show the directions in which the textile-machinery industry (and therefore the textile industry itself) is moving?

Here are the trends as they look to TEXTILE WORLD editors who attended the Atlantic City show:

1. Higher prices for equipment—Not true of every piece of equipment, to be sure. But true in enough instances to mark a firm trend. Granted, today's higher-priced equipment is faster, does more jobs, requires fewer man-hours per unit of output, turns out a product with better quality. The fact remains, it does cost more. That means a mill owner's capital investment must be correspondingly higher than it was yesterday.

Where will the money come from—this money that's needed for capital investment? Right now, a good deal of it is available from depreciation reserves. But that's not enough to take care of today's higher price tags. Indeed, depreciation will never provide enough funds as long as the textile industry is required to stretch its write-off over a quarter-century.

2. More flexibility in equipment—With equipment he saw at Atlantic City today's mill owner can respond quickly to swiftly changing market demands and fast-moving competitors without having to invest heavily in special-purpose machinery. Adjustments and adaptations are easy to make in the latest machines.

3. Growing cosmopolitanism—The big show had a strong international look and sound. Graceful Indian women in saris. A tall African in flowing, bright-colored robes. Quick-fingered, bright-eyed Japanese men and women. Lancashire-flavored English. Spanish and Portuguese from Latin America. English accented with German, French, Italian. Even so, it all blended together.

Same for American and overseas

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equipment. There was a blending in spite of differences. Take looms, for example. American-made looms at Atlantic City reflected the low silhouette that European looms emphasized at the Atlantic City show in 1954 and at the Greenville (S. C.) shows in 1956 and 1958. American looms also showed a new eye appeal (cleaner design and more covered gears) and gave a new feeling of self-containment (more individual loom motions), thus reflecting trends established earlier by European machine makers.

What gains from the low silhouette and clean design? Better-looking weaving departments, for one thing. Greater visibility for employees, too. Easier work (and probably simpler design) for mechanical loom cleaners. Less need for high ceilings in new buildings (therefore less cubage to be air conditioned and—with lighting fixtures hung from lower ceilings—better illumination at the working level).

On the other hand, the Europeans have picked up some ideas from American loom designers. Take filling mechanisms at the loom, for example. Three European manufacturers are equipping their looms with an American-made automatic loom winder. Others are using box-loading methods that were first designed in the United States.

4. More automatic operations—This means more instruments, more sensitive controls. They were everywhere at Atlantic City. Electronic sensing and recording devices for evenness of yarn, for yarn strength, and for humidity, to mention only three functions. Electromagnetic and electronic sensing devices and pushbutton controls for looms. As for chemical treatment and finishing, any mill man who walked the aisles at Atlantic City will tell you that there's hardly an operation today for which there isn't now some automatic control.

Other areas in which automatic devices are taking over? Lots of them. Counting, measuring, and recording, for instance. And process cycling. Lubrication, too. And that's not all by any means.

5. Faster speeds, bigger packages—Take roving frames, for example. Two years ago at the Greenville show most of them ran close to 750 rpm. spindle speed, with 12 x 6 packages. At Atlantic City nearly every frame on display ran close to 1,200 rpm., with 14 x 7 packages.

6. New structural materials and working parts—Fabricated steel is replacing the heavy, costly castings that were once thought necessary for rigidity and heavy service in machinery. Reinforced plastics are catching on—not only for machine enclosures but even as major structural elements in some equipments. Plastics are taking the place of wood for some loom components. Nylon bearings and even nylon travelers are coming up fast, too.

7. Advances in finishing—These include higher-speed processing at higher temperatures and pressures (mostly American developments). Also centralized controls (adapted mostly from European practice). More and more labor-saving auxiliaries. And more effective washing for open-width treatments.

Crowds Pulled

Every exhibitor got his share of visitors who quizzed, probed, peered, felt, pointed, and pondered.

What pulled the biggest crowds? Four things, as TEXTILE WORLD editors see the show. Here they are:

1. Automatic doffer—This machine eliminates a mean, hard, costly job.

2. New roving frame—This eliminates nearly all the driving mechanisms that usually clutter up the space behind the spindles.

3. Shuttleless loom. Three exhibitors showed their models to bug-eyed mill men, who were seeing full-width shuttleless looms for the first time in this country.

4. High-pressure continuous bleaching—This equipment will have wide applications in dyeing man-made fibers. The pressure-sealing device is the key to the whole thing. The unit operates at 20 to 25 psi., and at temperatures up to 265 F.

Now, for a look at what was new at the show (i.e., not displayed at a major show in the United States since the Greenville show in 1958) . . . read on.

Opening, Picking, Carding

The striking changes were in attachments and assemblies rather than in machines themselves. Several companies showed granular tops for flatless carding. Other attachments permit faster carding and produce a cleaner and more uniform web. Most card clothing shown was metallic.

For use with Fiber Meter blenders, James Hunter Machine Co. displayed a Multi-Tuft bale blender that automatically feeds small pieces of cotton in sandwich form from every bale used in the lay-down. C. G. Sargent's Sons Corp. showed a simplified man-made staple opener and blender for wet or dry staple.

The Saco-Lowell/Davidson-Kennedy Opener - Blender - Cleaner (shown by Saco-Lowell Shops) is totally enclosed. It's designed to remove pepper trash and take out heavier waste before it can be broken into smaller particles. Production is up to 1,500 lb. per hour, with removal of 30 to 50% trash.

Spencer & Holstead Ltd. introduced a Vortex oiler and a rotary spreader. The Vortex unit has a built-in emulsion tank. The emulsion is metered so that the correct amount is automatically applied to the stock. The rotary spreader distributes wool from the opening machine into a circular bin by air pressure from the Vortex conveyor fan.

Proctor & Schwartz, Inc., displayed an automatic blending line that controls stock from bale to

spinning or felting. The equipment guarantees fiber-to-fiber blends within 1% accuracy, shades on one rerun, spinning efficiency increased 300%, and labor savings of up to 75%. The company also showed a blending feed that weighs up to 10 dumps per minute and resets itself in one-half second after dumping. For batt making, Proctor & Schwartz exhibited a system that cuts labor requirements 75%. Improved garnetts used in the system have 340% greater capacity than older models.

An automatic bale opener and blender that produces single tufts (0.1 to 0.3 grams each) was shown by Trutzschler & Co. Also a feeder hopper and picker combination with high-pressure calender rolls that can be regulated to produce laps under 5,000 lb. of pressure.

Windle Engineering Co. displayed a feedbox with capacities to 10,000 lb. per hour. Also showed a waste-control system that prevents contamination between cards and a portable bagger for packaging any sort of fiber or waste.

A fiber-blending opener that offers a variety of unit arrangements for special purposes was shown by Davis & Furber. T-arches permit wide adjustment of workers and strippers, and lags can be replaced at any time.

Davis & Furber also showed its improved three-cylinder, 84-in. woolen card and a two-cylinder, 60-in. card for man-made fibers. The former, called Model L, features new positioning of rolls to improve quality and production. A new tape condenser with a traversing winding frame was shown. The 60-in. card is designed for the production of controlled sliver for high-pile knitting machines. Workers and strippers on a T-arch permit a wide range of settings. Production is three times higher than that of conventional woolen cards.

Carding Specialists Co. Ltd. showed a cotton card with Crosrol web purifier and Universal coiler. The purifier (adapted from Peralta rolls) is designed to pulverize all trash in the card web. The Universal coiler, which gives closer fiber control, is available for 16- and 18-in.-dia. cans 36 and 42 in. high.

Platt Bros. (Sales) Ltd. showed a high-speed tape condenser with motion-shaft speeds up to 600 rpm. for every class of work from heavy carpet wools to finest Saxonies.

Edward S. Rudnick showed Daiwa's carding attachment—a special lickerin that runs 900 to 1,200 rpm—and a hollow lickerin roll with perforated surface area. Carding production is increased 50 to 100%, cleaning efficiency 400%, and sliver evenness 10 to 15%. Nep count is reduced 30 to 40%, yarn quality is improved, and a lower grade of cotton can be used. The attachment shown was producing 20 lb. per hour. Rudnick also showed the ACS continuous card stripper that reduces vacuum stripping to once a week by raising fibers to the surface of the clothing and redepositing the strips back under the lap.

Howard Bros. Mfg. Co. showed its improved Tuffer sample blender and a new-type cotton cylinder called Tufted Tufter that reduces neps 20% and stripping 50%, boosts production, and reduces grinding.

Duesberg-Bosson of America displayed a small Peralta machine for use with narrow cards and a mix-box unit for use with the machine. An individual card drive was shown by William Kenyon & Sons Ltd.

Several companies displayed the granular-top carding attachment (developed by Southern Regional Research Laboratory) that eliminates use of flats and reduces waste. It was shown by Benjamin Booth Co. along with its Graf line of super-precision metallic card wire and other card-room supplies.

B. S. Roy & Son also displayed a granular top and the SRRL pre-opener (used with or without the attachment). Roy also displayed its Microcision grinding cradle, its AlumaRoy drum flat grinder, and the Peter Walters line of cylinder grinders and card clothing.

Abington Textile Machinery Co. displayed the Cardpen attachment, which increases production of a 70-grain web into a 46-grain sliver by 25 to 50%. Also a cleaner for filter bags.

Ashworth Bros. showed its new split-top and metallic card clothing and metal process belts. Sobelcard had metallic clothing for all types of fibers. The Eureka flat wire that requires no grinding was shown in operation on a Platt Bros. card by Sykes, Inc.

Other equipment and supplies shown at Atlantic City included combs and aprons by James Smith & Son, Inc.; Solube R, a wool oil that doesn't wash out, by George A. Goulston Co.; pressed metal housings for bearing and pillow blocks by Fafnir Bearing Co; static eliminator by Simco Co.; aluminum-based lag pins by W. H. Bagshaw Co., Inc.; a bale press by International Sales Management Co.

Drawing and Preparatory Drafting

New drawing frames and new preparatory drafting equipment were exhibited. Most of the equipment was an improved version of conventional machines—higher speeds, bigger cans, suction cleaning, and special controls. Practically every drawing frame shown was capable of 600-yards-per-minute speeds, with greatly improved evenness of sliver.

Saco-Lowell Shops has added to Versa-Matic drawing frame the Zellweger Automatic Draft Control (ADC) system—an electronic arrangement that compensates for variation in sliver weight. Limits of correction are ± 20% of the mean draft. Whitin's M6 frame has been designed to run 600 feet per minute on carded stock and 450 feet per minute on combed stock. Features include 18x42 coiler cans on a rotating table, rigid construction, antifriction bearings, and a powerful vacuum cleaning device.

A two-head drawing frame that produces sliver of great evenness was introduced by Societe Alsacienne de Constructions Mecaniques. It features a new drafting system and creel arrangement. The drafting system is a two-zone, four-over-four arrangement, but roll sizes vary considerably and offset bearings on two of the top rolls permit small adjustments without tools or the removal of bottom rolls. The creel, which has a positive drive, automatically stops the machine when a knot, a thin place, or a broken sliver appears. Conventional piecing-up is eliminated. The frame, with its two 24-in. cans, averages 95% efficiency

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and runs 660 feet per minute on carded stock and 500 feet per minute on combed stock. Other features are web-tension control, magnetic locks, and a special air-filter.

The new O-M drawing frame, introduced by Edward S. Rudnick, automatically fills creel cans for OM-S spinning. It has an improved drafting system, suction clearers on top and bottom rolls, power-driven sliver-lifting creels, three sets of stop motions, and a better system of sliver cutting and coiling.

Mitsubishi introduced the Howa fleece-mixing drawing frame with two heads and one delivery that runs 400 feet per minute.

American Rieter Co. displayed a new frame called DO, with speeds up to and over 600 feet per minute. Can size is 18x42 inches. Frame is equipped with suction cleaning and three-over-five drafting.

Platt Bros. (Sales) Ltd. showed a new drawing frame that runs 300 to 420 feet per minute. Gage is 18 inches. Various drafting systems are available.

Preparatory Drafting

Several exhibitors featured preparatory drafting equipment for long-staple fibers.

Roberts Co. showed the Roberts-Tematex ParaDrafters for use before spinning. Included were an Auto-Evener (corrects sliver entering weight of ± 20% into a delivered sliver with a maximum variation of ± 1%) and a ParaBlender (combines two ParaDrafter heads to provide a large number of doublings and melange blending).

Anderson Machine Shop exhibited a Pacific coiler that puts 50% more stock in cans and places and indexes the cans automatically.

For its pin-drafter intersecting draw frames, Warner & Swasey showed a high-speed coiler for cans up to 42 inches high, a self-contained ball doffer capable of handling 18x24-in. balls weighing 50 pounds, and an automatic can doffer that indexes cans into position.

A new Servo-Drafter intersecting drawing frame, designed to maintain consistent yard-to-yard sliver weight in all top-making, drawing, and precombing applications, is accurate within 1%. The machine in a single draft can correct input variations of as much as ± 25% in wool and the complete range of man-made fibers. Faller-bar operating speed averages 1,500 drops per minute.

The Duranitre line of drafting equipment includes an Autoleveller, a gill-box drafter, and a melange blender. The Autocalibreur Autoleveller has twin heads for processing two different lots simultaneously. The nonintersecting gill box Record Drafter produces six slivers at 110 yards per minute. The Super-Melangeuse blender drafts to 24.

Holdsworth Mfg. Co. featured a high-speed Super Gill with an entering speed of 15 yards per minute at 1,430 faller drops, an Autoleveller Super Gill that reduces irregularities of entering weight from ± 15% to less than 1%, and a Super Gill balling-head delivery.

Texplant Corp. introduced the HMG-Auto-Gill (HMG-Intersecting with weight control) that has automatic can delivery and a maximum speed of 55 yards per minute.

N. Schlumberger & Cie. showed its finisher intersecting gill box (with draft regulator) that delivers 16x18 balls and is equipped with an automatic doffing device.

Combing—Higher output, better waste removal

Increased production (up to 60 pounds per hour) and better waste extraction were the common denominator of all combers shown at Atlantic City. Operating speeds of 175 nips per minute and up were almost standard.

An improved Super J comber that boosts production 20%, up to 63 pounds per hour, was demonstrated by Whitin Machine Works. This speed-up comes from a half-lap arrangement with improved needle spacing that can handle laps weighing up to 1,200 grains per yard.

American Rieter Co. showed its Pattern E 7 comber, which runs at 180 nips per minute on 1,050-grain laps. Production is 20 to 60 pounds per hour at 90% efficiency.

Platt Bros. (Sales) Ltd. displayed an eight-head Hartford comber that does quality combing at 60 pounds per hour. It's available with either bicoiling or twin-can coiling. It extracts from 5 to 25% noils.

For wool and worsted combing Whitin showed its brand-new American comber that produces up to 75 pounds per hour from a six-head delivery. (Conventional worsted combers produce about 18 pounds per hour from a single head.) The new machine resembles the Super J cotton comber and employs many of that machine's motions, setting arrangements, and design elements. Operating speed is 125 nips per minute.

A high-production French-system comb called Perl was shown by Societie Alsacienne de Constructions Mecaniques. This machine runs at 175 nips per minute and gives 20% more production than other French-type combs. Hourly production ranges from 25 to 60 pounds. A ball creel that can be rolled in back of the machine cuts downtime. Cans come up to 24 inches in diameter. Fibers can be blended at the comb, and a special position drive creel (similar to the SACM drawing-frame creel) is available.

Sant' Andrea Novara displayed its Model PS rectilinear comb running at 160 nips on wool and 175 nips on man-made fiber. N. Schlumberger & Co. showed a French-type comb (PB 25L) that stresses easy accessibility of all operating parts.

In the lap-preparation field, the Super Lap machine (Whitin Machine Works) permits a 3% waste reduction at combing. Whitin says it will pay for itself in a year.

Roving – Almost everywhere, faster and bigger

This will go down in history as the year of the souped-up roving frame. Practically every frame shown at Atlantic City was making a 14x7 package. And flyers were running up to 1,200 rpm. compared with 750 rpm. at the last Greenville show. The frames all emphasized better evenness. Some frames embodied new concepts in engineering and design.

The first really basic change in roving frame design made in many years was seen in Saco-Lowell's completely new Rovematic machine. The frame, which carries a 14x7 package at 1,200 rpm., employs new principles in housing design, spindles, flyers, drive, head end, and traverse. Most noticeable feature is elimination of cones, belts, traversing carriage, long reversing shafts, and other items that clutter up the space under the roller beam. Flying legs are tied together at top and bottom to prevent spreading. FS-2 drafting is used.

Whitin's Model P roving frame also embodies new concepts in roving machinery. The frame runs up to 1,200 rpm. and puts up to 6 pounds of stock on a 14x7 package. Speed is made possible by a special flyer and a heavily constructed chassis. Other innovations include a variable-speed cone drive, precision spindles, spring counterbalancing of the bobbin roll, and an integral waste-collection system.

American Rieter Co. showed an improved 14x7 slubber that reduces variation between front and back spindles and between empty and full bobbins. Features include straight-side cones, special builder action, and a device to permit fractional-tooth tension adjustment between front roll and flyer.

Platt Bros. (Sales) Ltd. also displayed a 14x7 frame that runs up to 1,200 rpm. and puts up to 100 ounces of roving on the bottom. Latest features include a new gear box for bobbin drives, front and back stop motions, automatic flyer positioning, and an improved flyer.

Auxiliary equipment shown included two roving-frame cleaners. American Moistening Co. displayed a traveling cleaner that operates on a low-voltage track and cleans all of the frame as well as the ceiling. A photoelectric cell stops the cleaner when the frame is shut down. Another cleaner designed to do the same jobs was shown by American MonoRail Co.

A brand-new approach to roving-frame cleaning that greatly reduces power requirements was demonstrated by Parks-Cramer Co. The system is based on suction louvers back of the spindles. Louvers operate intermittently by zones as the frame cleaner passes in front of each unit. End collectors under the front rolls have continuous suction.

A roving-bobbin cleaner that permits one operator to clean 60,000 bobbins per 8-hr. shift was shown by Terrell Machine Co. Jaws of special design prevent bobbin damage, and they can be changed for different diameter bobbins in 10 minutes. Safety switches stop the machine instantly in emergencies.

Several companies showed improved spring-bottom roving boxes of metal, glass fibers, and canvas. Among them were W. T. Lane & Bros., Inc., Carolina Fiberglass, Inc., Kennett Equipment Machinery Co., and Steele Canvas Basket Co.

Spinning – Trend to new frames

In contrast to the last Greenville Show, where half a dozen new cotton-spinning frames were shown, emphasis at Atlantic City was on woolen and worsted frames.

One of the most interesting exhibits was a pot-type spinning frame running 16,000 to 18,000 rpm., a drastic departure from conventional spinning. Most of the other frames shown were improved versions of standard machines. A few spinning change-overs were shown, but not nearly so many as in previous years. The trend: Mills are more interested in buying new frames than in rebuilding old ones.

Roberts showed two worsted-type frames, Whitin introduced new woolen and worsted spinning frames, Saco-Lowell brought out a new worsted-spinning frame, and Davis & Furber displayed a new woolen frame. Several foreign frames were displayed.

Roberts showed its Arrow WM-1 narrow worsted-system frame for the first time. The machine incorporates a new version of the PermaSet drafting system, which can be run as either a four-roll full-control system or as a three-roll adjustable system. The 36-in. Arrow WM-2 worsted system also was shown. An improved drafting system makes this machine especially useful for spinning coarser knitting yarns.

Whitin's Flex-Spin woolen frame utilizes balloon-control rings and a variable-speed drive. A 16-in. traverse permits production of a 20-oz. bobbin of soft knitting yarn and a 32-oz. bobbin of regular knitting yarn. Other features include a simplified spindle drive, antifriction spindles, and a new type of hand brake.

Whitin also showed the Piedmont KW, a worsted adaptation of the regular Piedmont cotton-spinning frame. This frame, only 27 in. wide, has streamlined housing, individual side-shaft spindle drive, straight-line spinning, and two balloon-control rings for each spindle. Gearing is enclosed in the head end. The machine has a built-in system for removing waste and dispersing motor heat. Traverses up to 11 inches can be used.

Saco-Lowell's new S-J worsted frame (Gwaltney type) has double-apron drafting designed for high speeds. Special fiber-control features make it versatile in drafting worsteds, man-made fibers, and blends. The company also showed its SF-4C worsted drafting change-over, which is easily adaptable to conventional frames.

Davis & Furber cites 37 important features for its Model H woolen-system frame, shown for the first time. Among the new features are balloon control rings, variable speeds, tension control, and increased package size. Floor space required is 15% less per spindle than for former models, and its 15-in. traverse paper tubes increase yarn area 15 to 45% over wooden bobbins.

Among the foreign frames shown was a wool-spinning frame with 18-in. traverse that makes a large package suitable for carpet yarns. This machine was introduced by Duesberg-Bosson of America, which

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also showed a sliver-to-yarn frame for spinning coarse numbers.

Houget displayed a 7-in.-gage ring-spinning frame for carded wool, worsted, and other fibers that is said to run at high speeds and put a greater density of yarn on the bobbins. For 5½-in. rings, maximum front-roll speed is 400 rpm. at a spindle speed of 5,050 rpm.

Mitsubishi exhibited a pot-type air spinning frame for worsted yarn that has a pot-rotating speed of 16,000 to 18,000 rpm. Ends down are negligible.

Carniti showed a direct spinning frame for worsted, man-made fibers, and blends. The stationary spindle rail, fed from cans, can be delivered with one or two sides. Drafts are from 30 to 150. Bobbins up to 16 inches long can be spun.

The only completely new American cotton-system frame shown was the 27-in. Whitin Standard frame designed for low-cost modernization. It incorporates many of the best features of other Whitin frames such as Super-Draft two-apron drafting, STA top-arm weighting, Pioneer center-base antifriction spindles, and Kryton rings.

Saco-Lowell showed a Magnedraft frame equipped with a new front-top-roll support and other modifications. Magnetic attraction produces top-roll pressures.

Roberts showed its Arrow M-1, now refined and streamlined, running on cotton and various man-made fibers. Improvements include a simplified balloon control, double-tape tension system, enclosed base rails, and variable-speed drive.

Platt Bros. (Sales) Ltd. exhibited its MR-4 ring frame, 28 inches wide. Roll stand is standardized at 45 degrees to provide lower yarn tensions and a better balloon.

The G-4 ring spinning frame was displayed by American Rieter Co. Improvements include movable base rails, automatic underwinding and stopping mechanism, antifriction bearings in all three lines of top and bottom rolls, Hebucofil cleaning.

Edward S. Rudnick showed the model OM-S sliver-to-yarn direct spinning frame. It features an automatic spindle-speed regulation, automatic stop and rail-lowering motion with doffing pilot lamp, automatic starting clutch and lubrication.

Shown in conjunction with this frame was the Kanegafuchi Auto-Doffer that automatically doffs full-length spinning frames, twisters, etc. in less than 2 minutes with 30 to 50% fewer ends down than are produced by human doffers. Two doffing heads travel along the frame at about 25 feet per minute while the frame is stopped. When the run is completed, the doffer automatically restarts the frame.

Dixon Corp. exhibited five new spinning items: (1) Cavalla Roth drafting with 60-degree roll stands, (2) tension weighting with a tension meter to measure top-roll pressures, (3) two-apron Shaw drafting with four parts per spindle, (4) VaClear top-roll suction clearer that eliminates top-roll laps, and (5) static-free, nonlapping, and nonlicking cots and aprons.

Cotton-McCauley & Co., Inc., showed its improved Clean Guide spinning change-over for converting most types of cotton-system spinning to double-apron drafting. Better spring weighting and adjustable apron tension are featured.

Societe Alsacienne de Constructions Mecaniques showed a spinning change-over with many of its parts made of tough, long-life molded plastics. Settings, rolls, and aprons can be quickly changed. Medley planet gearing is used.

Auxiliary spinning equipment included several new frame cleaners and improved suction cleaners. American MonoRail showed a vacuum cleaner that can travel over 30 frames and pick up lint from the entire area. Waste is automatically removed by a collector box. American Moistening Co. showed a new ceiling cleaner that has twin propeller fans that oscillate through a full 180-degree traverse and clean the entire room above the 8-ft. level. Improved vacuum collectors and frame and floor cleaners were shown by Parks-Cramer Co. Bahnson showed its Vacu-Pak floor sweeper and the latest model cross-jet cleaner operating on the Verti-Rail Track, which provides a wide surface for strength and safety.

Other auxiliary equipment and supplies shown included a pendulum arm, roller-bearing bolsters, and top rolls by SKF Industries; a 17¼-in. wool spinning tube by Textube Corp.; a new lightweight warp-free jack spool by National Vulcanized Fibre Co.; improved rings and Lubricase rings by Herr Mfg. Co.; a low-cost spindle by Cometsa; an improved scavenger roll for bottom rolls by Bahnson; the Peter Wolters roller-buffing lathe by B. S. Roy & Son; and nylon spindle tapes by William Kenyon & Sons.

Spooling, Winding, Twisting, Texturing—Lots to see

A galaxy of spooling, winding, twisting, and texturing equipment was on display—more than at any previous American exhibition.

Most of the machines were running man-made fiber. No one mechanical trend can be cited. But all the machines stressed higher speeds, bigger packages, and greater use of automatic and electronic controls.

Leesona Corp. showed its Uniconer running at 1,200 yards per minute. An automatic knotter at each spindle keeps downtime (breaks and run-outs) to a minimum. Machine patrolling is eliminated. Leesona also showed the No. 970 spinning take-up machine, which takes up filament from spinneret or extruder at 6,000 feet per minute. Electronic controls hold tension at 5 to 150 grams.

The Conorapid precision cross winder, displayed by Robert Reiner, Inc., offers an operating speed of 2,000 to 4,000 rpm. and produces 1½ to 3 times as many full pack-

ages as conventional machines. Strong bearings and rotating parts permit heavier packages. This company also exhibited the Schaffhouse rubber-thread covering machine with spindle speeds up to 16,000 rpm. Individual spindles stop when pushed clear of the driving belt.

Fletcher Industries showed its 9,000-rpm. Duplex double-twister, which twists up to eight ends, and its 5-lb.-package Jumbo doubler twister, which has a 9- and 10-in. traverse.

Uptwisting and winding machinery was displayed by Ateliers Roannais de Constructions Textiles. The uptwisters are used for putting false twist into thermoplastic crimp yarns. The winders are adjustable for cylindrical or conical packages.

The Schweiter automatic filling winder, manufactured by Whitin Machine Works, was shown running at high speeds. This machine has a new parallel bobbin arrangement for filling all types of loom batteries and is equipped with a rotor for building tailless bobbins.

Foster Machine Co. showed its Model 506 cone winder, which features economy of design and also of operation.

Improvements in Schlafhorst winding machinery, shown by Terrell Machine Co., include better tensioning, a bigger blower, and a new marking device. The Servoloom Autocopser designed to feed the Draper automatic filling magazine was featured in the Terrell booth.

Scharer showed its improved filling winder that runs at 12,000 rpm. Features include a low frame, dust-removal device, and sensitive tension elements.

The Delerue Rocket Winder was introduced by Interstate Textile Equipment Co. This machine winds a 6-in.-dia. coreless package 30 inches long that weighs 6 pounds and can be used in place of cross-wound cheeses or cones. Bobbin holds 2 to 10 times as much yarn as similar-diameter packages made on other machines.

Stellamcor showed two Gilbos cross-winding machines. Type Rolls-10 has a 10-in. traverse and produces packages with a maximum diameter of 11 inches. Type VC, which winds from hanks or skeins directly onto cones, has spindles designed 9° 15′ and 5° 57′ cones or cheeses. Traverse is 5 and 6 inches; speeds are 110 and 525 yards per minute.

August Herzog Maschinenfabric showed its complete line of high-speed braiding machines for manufacturing round, flat, and special braids for all uses, including heavy ropes and hawsers.

An automatic spooler designed to make cheeses up to 6½ pounds was shown by Barber-Colman Co. The cross-over, back-and-forth groove in the winding drum produces a cheese 6 inches wide from bobbins up to 14½ inches long. A modification with different package-holding arms winds 6° cones of the same width and weight. The spoolers are known as Models F and FF.

Collins Bros. Machine Co. featured its Sav-Yarn twister, capable of making 12-lb. packages on Airestop spindles. Advantages include elimination of drop ply, doublings, partially filled bobbins, and knee brakes. A 500% increase in tape life is reported. Collins also showed its Model II quiller, with special device that automatically winds tip bunches and loads bobbins into boxes.

U. S. Textile Machine Co. displayed its Acme doubler-ring twister, which offers two types of feed rolls for pretwisting or combining all types of yarn (300% greater productivity than older models). On display in the same booth was the Barmag double-twist uptwister, which has a yarn take-up speed of 120 meters per minute, and the Acme texturizer for small packages.

R. H. Hood Co. showed an open doubler designed as the first operation following the Perlok process of man-made tow conversion. The machine eliminates one drawing operation in some instances.

Cosa Corp. introduced a number of European yarn-handling machines, including the Mettler doubling winder, hank-to-can winder, and yarn-singeing frames. Also shown were the Sahn cross winder for pineapple cones, semiautomatic tuber and coner for 15-in.-dia. packages, winder for knitting yarn, and coner and tuber for sewing thread. Reeling machines by Maschinenfabric were on display in the same area.

Atkinson, Haserick & Co. showed a bobbin stripper, manufactured by Plutte, Koecke & Co., that is used in conjunction with Hacoba braider bobbin winders. Capacity is 30 bobbins per minute with a maximum tailing of 40 meters.

Paramount Textile Machinery Co. showed a twist setter and conditioner with a range of treating temperatures from 150 to 280 F. Cycle is one-fifth to one-twentieth the time required by older machines.

Fabrionics Corp. displayed its Una-Mag electromagnetic yarn tension, which releases tension as the package builds. Also shown were a voltmeter for checking static electricity and a portable tensiometer that operates up to 12,000 rpm.

In the textured-yarn field Deering Milliken Research Corp. showed two machines that feature a single-step process for making Agilon yarns. Model 2086 is for producing single stretch yarns in a range from 15- to 100-den. monofilament. Model 2110 produces single and plied yarns from 20-den. multifilament through 200 denier in the single end. This machine can make either stretch or bulk yarns, because it has a second heat-setting and relaxing step as part of its continuous process.

Whitin Machine Works demonstrated the Whitin-FT (Roannais) machine for producing textured yarns. The machine features in-process control of tension, temperature, and twist so that it can tailor yarns to meet nearly any market requirement.

The Scragg group showed a textured-yarn process for producing stabilized, high-bulk polyester and polyamide modified filament yarns with nontorque physical properties and a covering capacity up to 50% greater than wool yarns of the same weight. A new heat-setting technique is used, but exact details are disclosed only to licensees.

A machine that covers elastic yarn at 5,000 to 16,000 rpm. spindle speed was shown by Officine Meccaniche Menegatto. The rubber thread to be spiraled unwinds from king spools or bobbins, and the covered thread is wound on skeins or on crossed bobbins.

Among the auxiliary attachments shown was the Qualitex electronic slub catcher, which cuts yarn within 0.001 second after an imperfection is discovered. It is sold in the United States by W. A. Thomason Textile Service.

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Along with the complete line of Schweiter winders, a dust-removing device for pirn winders was shown by H. J. Theiler Corp. Royal Worcester Industrial Ceramics Ltd. showed its line of Regalox thread guides that have a hardness of 9 Mohs (between that of sapphire and diamond). Extremultus, Inc., exhibited samples of belting especially designed for use on false twisters and other high-speed machines that run up to 80,000 rpm.

Other auxiliary equipment shown included a grid-type gate tension with 11 fingers for use on Universal cone winders by Heany Industrial Ceramics Corp.; improved dye springs that save the last layers of yarn by Davidson Industries, Inc.; thread guides and tensions by Crabtree Textile Accessories, Inc.; and improved spools, bobbins, and yarn containers by National Vulcanized Fibre Co.

Warping, Slashing, Weaving—The changes come fast

If any mill man had any doubt about the obsolescence of most looms in textile plants today, the exhibits of more than half a dozen loom manufacturers quickly erased that doubt.

About all that's left for a weaver to do on the new looms is to draw in broken warp ends or match an occasional broken strand of filling yarn. On the other hand, smart loomfixers will be needed—a small screw-driver will replace the big hammer to adjust the electronic and electromechanical controls.

With Shuttles—and Without

Mill men at Atlantic City got their first look at full-width shuttleless looms in an American show. Draper Corp. demonstrated its shuttleless D.L.S. loom and Edda International Corp. and Abney Mills showed the Maxbo shuttleless loom.

A top crowd-puller was the Draper shuttleless loom. A 40-in. D.L.S. loom was running 236 ppm. on a sports denim with a three-harness 2 x 1 left-hand twill. A 50-in. D.L.S. loom was weaving at 238 ppm. on a spun-rayon flannel with four harnesses making a 2 x 2 twill. A third D.L.S. loom was weaving gauze in a two-harness plain weave. This loom was operating slowly so mill men could inspect the movement closely. (TEXTILE WORLD, Feb. 1959, p. 97.)

The Maxbo loom also demanded interest. It uses a stream of compressed air to propel the filling through the warp shed. This 46-in. loom was weaving a cotton fabric at 330 ppm. (TEXTILE WORLD, Aug. 1959, p. 141.)

Outstanding among many shuttle looms shown was the expanded C-7 loom series with electronic and pushbutton controls manufactured by Crompton & Knowles Corp. Three primary new types of the C-7 were shown:

1. A terry loom (C-7), which is built 38 to 68 inches wide, is made both as a 2 x 1 and 4 x 1 box loom. It's equipped with either a jacquard, cam-harness motion, or dobby with punched-pattern indication. Reversing roll motion provides further space savings where long box or pattern chains are used with a dobby. Terry beams up to 30 inches in diameter and ground beams up to 26 inches are used. The 38-in. loom at the show was running at a rate of 195 ppm.

2. The C-7S loom for weaving fine-filament man-made fibers was shown running on acetate plaid fabric at 185 ppm. Loom width was 56 inches. Loom features are four-color rotary magazine with 36-bobbin capacity in simple and gentle procedure, vacuum filling control, scissors thread cutter, and electronic feeler that doesn't touch the filling bobbin and is not affected by shuttles that don't box properly.

3. The C-7A is for lightweight and midweight suiting fabrics in all-worsted or blends. It is especially suitable for drapery and upholstery materials. It is 82 inches between swords. It has a dobby of either 25 harnesses of 3/8-in. gage or 20 harnesses of 15/32-in. gage. Shuttle boxes are 4 x 1. Speed on the 9-oz. man-made fiber women's-wear was 170 ppm. This low-silhouette loom has A-type cross girders and box steel lengthwise girders. For higher loom speed, the punched-pattern-indicating dobby is mounted in a low position for improved support to reduce vibration. The lay is controlled by cams instead of the conventional crankshaft. This feature, along with electric protection, gives many advantages that C&K says contribute to higher speed and greater work assignments. A variety of let-offs is available, but the loom at the show was running with a Hunt let-off on a 32-in.-dia. yarn beam.

More Versatility

Draper's two new conventional-type looms also drew attention. The 50-in. X-3 loom was running at 200 ppm. on an acetate dress fabric. This versatile loom was designed to weave all fabrics woven on X-2 looms and many man-made-fiber fabrics commonly woven on XD looms. This loom is almost 500 pounds heavier than an X-2 loom and therefore is stable and runs smoothly. It is furnished with (1) a clock-spring top with up to six harnesses, (2) 16-harness 15/32-in.-gage, or (3) 20-harness 3/8-in.-gage dobby. The 16-harness dobby was shown.

The second Draper loom shown was the 72-in. XB model weaving a nylon-acetate-viscose blend of suiting fabric at 166 ppm. This loom combines many of the features of the XP-2. The loom running in Atlantic City had two sets of harness cams on the auxiliary shaft and two sets of clock-spring tops. It had center-fork filling stop motion, Tru-Tension let-off, and Draper automatic filling magazines.

The XB loom is also built with a

dobby and with a 2x1 box motion. Other features are link-type parallel, 28-in. adjustable yarn beam, and automatic lubrication.

Narrow-Fabrics Looms

New looms shown by Fletcher Works, Inc., included the Multi-Fab 9-ft. loom that was running 300 ppm. It's for lightweight and medium-weight fabrics of ribbons, tapes, elastics, and glass. A second model is the Power-Fab 5-ft. automatic loom that runs 250 ppm. on Type I and IV webbing, elastics, and plastic webbing. It runs 300 ppm. on light fabrics. It has 54-in.-traverse warp beams and 1¾-in.-dia. bobbin heads.

Looms From Overseas

Several variations of looms were displayed by Adolph Saurer Ltd., Switzerland (Saentis, Inc., U. S. sales agent). One of its most interesting looms was a single-shuttle adaptation of its Type 100W with Leesona Corp.'s Unifil loom winder. The loom is 44 inches wide and runs 195 ppm. Another version of the Type 100W is a fully automatic 6 x 1 drop-box loom that weaves multicolor patterns with five or six colors of filling. Cloth width is 47 inches, and loom speed is 160 ppm. The loom has a six-color vertical magazine to transfer filling automatically. If the box motion and magazine fall out of synchronization, a stop motion stops the loom. The magazine holds a total of 92 filling bobbins.

A single-shuttle loom 71 inches wide was running 200 ppm. with Saurer's box-loader magazine. Saurer's single-shuttle automatic terry-towel loom combined with an electromagnetic name-weaving apparatus, Huttwil, was weaving three towels all at one time in 71-in. reed space.

Two English-built looms were demonstrated by British Northrop Sales Ltd. The first model, a 44-in. single-shuttle loom with Leesona's Unifil, was weaving a plain-weave spun-rayon fabric of 18s warp and filling at 245 ppm. The second loom was running a honeycomb pattern of 18s warp and 5s filling. This 70-in. loom was equipped with a Richardson dobby and was running 154 ppm.

"Piconal," S.A., Metiers Automatiques (Belgium) showed its President looms. The first loom was a single-shuttle loom 86 inches wide with four harnesses, weaving combed-cotton fabric at 170 ppm. A second single-shuttle loom, 48 inches wide with six harnesses, was weaving broadcloth at 240 ppm. A third loom (six-harness cam weave) was running Bedford cord. This loom is 46 inches wide and runs 240 ppm.

Piconal's fancy loom has a Staubli dobby. It was weaving spun-rayon upholstery fabric on 12 harnesses. The loom is 69 inches wide and runs 180 ppm.

Wilson & Longbottom showed its wilton and velvet carpet loom. This 27-in. double-shuttle loom was weaving at 200 ppm. It is built in widths up to 15 ft.

An automatic shuttleless narrow-fabric needle loom, Ultratex, was introduced by Texnovo S.p.A., Italy (TEXTILE WORLD, Apr. 1960, p. 116). (U. S. and Canadian sales agent is Snedeker & Co. Inc.) This 100% automatic loom was weaving fabrics up to 10 inches wide with standard selvage. It can also weave fabrics up to 1½ inch wide with a knitted edge. The loom has 16 heads and makes 800 rpm. The manufacturer says that a woman weaver can easily run 10 of these looms for a total output of 260,000 ppm. with an over-all labor-cost reduction of 25%.

Another overseas manufacturer, Ruti Machinery Works Ltd., Switzerland (U. S. sales agent, H. J. Theiler Corp.) showed four looms. One, an automatic high-speed loom, was weaving 47½-in. cotton fabric with Leesona's Unifil at 232 ppm. Ruti also showed its single-shuttle looms with automatic filling-container, yarn-transfer units for rayon and cotton, and its 4 x 1 drop-box high-speed loom with the container transfer unit.

Another Swiss firm, The Sample Weaving Machine Co. Ltd., showed its sample weaving loom with electromagnetic control of harnesses.

Better Jacquards

A double-lift paper-tape jacquard, reported to weave as fast as a plain-loom harness motion, was featured by Verdol, Societe des Mecaniques (sold in the U. S. by Baxter Corp.). The jacquard was running on a loom with 12,000 ends in 210-den. nylon warp 74 inches wide at 165 ppm.

A new high-speed jacquard was demonstrated by Crompton & Knowles. Features are extra-heavy frame, fine index, French index, double lift, double cylinder, and rise and fall three-position plush.

Samuel Dracup & Sons Ltd. showed a double-lift double-cylinder open-shed jacquard that increases loom speed 25%.

Another of these modern jacquards for high-speed weaving was shown in the booth of Thomas Halton's Sons.

Better Attachments

A "Remember and React" control for carpet looms was demonstrated by Lansdowne Steel & Iron Co. The control measures the carpet roll and cop. It also indicates warp ends down and stops the loom from drop wires. The device is also used on needle looms.

Its Series 8300 filling holder and cutter for looms was exhibited by H. F. Livermore Corp. The holder and cutter eliminates filling drag-ins caused by faulty older holders and cutters. In addition, it reduces loom downtime, increases production, and reduces second-quality fabric generally.

Steel Heddle Mfg. Co. showed its shuttle for XD looms with a vulcanized-fiber strip inserted in the wood near the eye to prevent shuttle splitting. The shuttle is designed especially for the No. 903-eye dogwood shuttle.

An extra-rugged loom shuttle made full thickness of resin-impregnated and laminated fabric was featured in the booth of Watson-Williams Mfg. Co.

A standout among loom cleaners was shown by American Moistening Co. This cleaner has a four-section blower under the drop wires. There's a two-section vacuum pick-up at the opposite end of the drop wires from the blower. A 1/20-hp. motor from the loom wiring system powers the vacuum pickup. The cleaner was shown on an X-2 loom. Each loom in a mill will require its own individual unit. The system is especially suitable for shuttleless looms.

Bahnson Co. showed its new loom

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cleaner operating on a 50-in. X-2 loom. The cleaner distributes a positive air stream at high velocity.

A loom-cleaning system, Travel-Vac, in tandem with Oscillaire loom cleaner, shown by Parks-Cramer Co., eliminates frequent causes of lint accumulation and contamination and reduces lost production.

American MonoRail Co. displayed a cleaner with heads that travel closely over front and back of the loom and direct intermittent air currents at opposite angles.

Slashing Updated

Outstanding in the slashing equipment was a size-preparation machine, High-Temperature Converter, demonstrated by A. E. Staley Mfg. Co. (TEXTILE WORLD, Nov. 1959, p. 157). The system modifies starch paste to a noncongealing size of reduced viscosity to obtain a size of the desired fluidity.

A cylinder drying section for slashers and a double-roll size box were exhibited by Cocker Machine & Foundry Co. The section is lower than Cocker's previous models. Any cylinder can be removed alone.

Cocker also introduced a hydraulic beam-loading and doffing system on its new warper—2,400 to 3,600 yards per minute.

Hayes Industries, Inc., showed a new 30-in. nylon tricot beam that holds 800 pounds of 30-den. nylon yarn. This 30 x 42-in. beam weighs only 229 pounds.

An aluminum 38-in.-dia. warper beam with tires of heavy-gage steel was shown by Briggs-Schaffner Co. Features are one-piece steel-forged journals steel bushings for driving points, screw-tensioned joints.

A tricot warper, Model 149B, that will take a 50-in. beam up to 32 inches in diameter and can be quickly converted to take a 42-in. beam or two 25-in. beams was shown by Kidde Textile Machinery Corp. Kidde also showed a creel that handles any type of yarn package simply by using adapters.

Versatile creel package holders were shown by Edward J. McBride Co. The bowed spring spindle with cone and large package holders can take every type of package used on over-end take-off.

A warp lubricator that's mounted on the slasher frame was shown by Seydel-Woolley & Co.

Faster Warp Preparation

A warp-tying machine, Ustermatic, made by Zellweger-Uster, Switzerland, and sold in the U. S. by Uster Corp., was shown tying 550 to 650 knots per minute (TEXTILE WORLD, Jan. 1960, p. 133). The machine was shown tying from a flat sheet, lease, and combination.

The Knotex Maschinenbau warp-tying machine, made in Germany, was shown tying up to 400 knots per minute. The machine has four methods of tying in a single model and can be adapted to each method in only 30 seconds.

Better Accessories

Two new filling feelers were shown. Preskin Co. offered a photoelectric bobbin feeler with a single-lens reflect system. The light source and receiver are located in one housing. As with other photoelectric feelers, a reflective material is taped to the filling bobbin. The feeler operates accurately even on highly reflective yarns such as nylon.

The second feeler, a mechanical one made by H. F. Livermore Corp. primarily for single-shuttle looms, has a transparent cap that makes moving parts visible. The all-nylon case virtually eliminates friction and gives empty-bobbin indication.

Another development is a plastic lug strap shown by Schmidt Mfg. Co. This highly polished and colorful material, Polydur, looks like the new plastic pickers.

Steel Heddle Mfg. Co. introduced four new loom reeds: (1) angle-dent model for evenly spaced warp ends, (2) loose spring reed for added size, (3) rigid metal for woolens and worsteds, and (4) armored for maximum rigidity.

Nonwoven Machines

Three companies showed new machines for making nonwoven fabrics. These exhibitors pointed up the importance of this fast-moving segment of textiles.

James Hunter Machine Co. demonstrated a random-weave machine to produce nonwoven fabrics. This machine produces a random web at high-production rates from animal, vegetable, and man-made fibers. Fabric weight is 1 to 12 ounces per square yard.

A second Hunter machine set up in conjunction with the web-forming machine is a needle-felting machine. It also is designed for high speeds. Needles are arranged to produce unusual and varied materials such as women's wear, blankets, and bags.

Curlator showed the latest version of its Rando-Feeder and Rando-Webber, Model 40B, for handling finer man-made fibers. It is made in 40-, 60-, and 84-in. widths.

Proctor & Schwartz, Inc., presented its Proctor-Farm Machine, which produces webs from natural and man-made fibers in widths from 60 to 96 inches.

In the Allied Chemical Corp. booth, a 30-in. Cobble Bros. tufting machine was tufting a carpet of Capralon textured continuous-filament nylon yarn. This $\frac{5}{16}$-in.-gage pattern machine, Model CB11000, was making a loop-and-cut pile.

Bleaching, Dyeing, and Finishing

Two important advances in cotton bleaching were featured at the Atlantic City show.

First, Becco's continuous open-width system that operates at 25 psi. is undoubtedly a major breakthrough. The trick of maintaining pressure in the reaction chamber lies

in an ingenious pressure-seal system developed and built by James Hunter Machine Co. A working model at Atlantic City bleached scoured cloth in 45 seconds at a rate of 10 yards per minute. Plant-scale units are expected to work at 100 yards per minute on 2.00-yd. goods. The machine is a natural for development into dyeing applications, where high temperatures will speed handling of man-made fibers.

Second, continuous peroxide bleaching at atmospheric pressure has been improved by development of a Rapid Bleaching Range built by Rodney Hunt Machine Co. Advantage of this new process lies partly in the J-box, where storage time is cut to as little as 8 minutes and rub marks are reduced as much as 50%. Beefed-up caustic and bleach formulas make up for the shorter time that is required in the J-boxes.

Dryers Improved

Today's equipment means better drying of textile materials in all forms.

C. G. Sargent's Sons Corp. featured a gas-fired stock dryer with no internal heating coils and excellent air distribution. The Schilde dryer, built in Germany and sold by Cosa Corp., is a single-pass belt-type dryer that can be equipped to handle stock or fabrics that are permeable to air.

Can dryers built to eliminate all tension were featured for the first time at this show. The cans are belt driven, and provision is made to vary the speed of the first feed cylinder so that goods go into the dryer at any predetermined tension. Advantages include the ability to handle any type of fabric not usually dried on conventional cans, and fewer problems from migration of color or finishes. Speed and moisture controls are available. The equipment is made by Tattersall & Holdsworth at Enschede, Holland, and sold in the United States by Ernst Frankl Associates.

A drum-type dryer called the Teelax-Jet Dryer by its manufacturers, Tubular Textile Machinery Co., provides tensionless drying for knitted and woven fabrics in any surface texture.

A can dryer shown by Unistel Textile Machine Corp. rotates on fixed journals. Rotary joints are not necessary, and troubles with syphon pipes are eliminated.

Proctor & Schwartz featured an entire drying and curing range. Produced in cooperation with Artos Maschinenbau, the range includes the Artos Air Float predryer, a low-profile tenter housing, and the Proctor Continuous Rotary Polymerizer for resin-curing.

A roller dryer for printing machines handles fabric and backgrays continuously. It has a drying capacity of up to 495 yards per minute under controlled conditions of tension and temperature.

Also shown was Proctor's Automatic Hosiery Preboarder, which will handle up to 40 doz. pairs of hose per hour. Only labor required is for loading and stripping forms.

Better Dyeing, Printing

Pressure dyeing and higher speeds are the key words here.

Pressure dyeing for man-made fiber in skein form is possible with Scholl's S 107/100 machine (marketed in the U. S. by Cosa Corp.).

Package dyeing at normal or high temperature is possible in equipment shown by Callebaut-De Blicquy. Features include a high rate of liquor flow at low pressure (produced by a built-in reversible pump of new design) and elimination of four-way valves and piping.

Standfast Dyers & Printers Ltd. showed the latest model of the molten-metal dyeing machine made to specifications by Mather & Platt. Advantages of the system include short clean-up time. When coupled with a conventional pad, the molten-metal system can handle a wide range of fabrics.

A variation on automatic screen-printing (for short runs or samples) was featured by Societe Alsacienne de Constructions Mecaniques. In this system, the cloth is glued or pinned to a stationary table and the screen is moved along the table length by an automatic carriage. At the end of the run the carriage returns to the starting point, where the second screen and accompanying color are placed in the carriage. One operator can tend to two or three tables.

A new design in jigs was shown by Werner Machine Co., Inc. Jig beams are quickly removable for winding on goods. This machine will save up to two hours per batch because the usual slow run-down and shell-up operations are completely eliminated.

Kuster's Backgray Washer features a vibratory cylinder that speeds up washing of print blankets. The Kusters Aqua-roll mangle is a part of this machine, built by Textilmaschinen Edward Kuster.

Morrison Machine Co.'s outstanding exhibit was a pad-Williams unit combination that is especially suited for use as a chemical pad for vat dyeing or for reactive dyes and any other chemical treatment.

Napping Controlled

Nappers, domestic and foreign, are much improved today, especially in control of pile and counter-pile motions.

P.I.V. drives predominate, with hydraulic drives a close second. The old cone-pulley drive has nearly vanished.

David & Furber Machine Co. featured P.I.V. drives on pile, counter-pile, and tension-control drives. Controls are all centered on a frame. Aluminum is used in the superstructure to reduce weight and eliminate need for overhead support. Rotating shafts have antifriction bearings.

An English entry, the Auto-Zero Napper, made by Tomlinson's (England) and sold in the U. S. by Atkinson, Haserick & Co., Inc., stresses precise control of the zero point in napping. All drives are infinitely variable through mechanical gearing.

Shears Now Better

A high-speed cotton-goods shear, made by Parks & Woolson, boasts an operating speed of 200 yards per minute, plus an automatic seam jumper and tension controls.

The Franklin shear, shown by David Gessner Co., is exceptionally sturdy. Controls are centralized and driving mechanism is totally enclosed. Settings can be easily made and reproduced.

Ateliers Raxhon S.A. (Belgium) showed its Supershear, equipped with an air-suction system that removes flock and lifts fibers into place for closer shearing. An auto-

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matic seam-jumping motion is standard equipment, as are brushing and velveting attachments.

Riggs & Lombard featured a high-speed cloth-room shear that will run at 200 yards per minute. This concern makes extensive use this year of reinforced glass fiber to form enclosures for moving parts. An entire fulling mill with a temperature-control feature is made from the glass-skin compound—a trend that may well develop into wider use of this material.

Turbo Machine Co. came up with a new idea in shears—a cross-cut model that operates across a width of carpet supported on a frame. Two shearing heads are adjustable to make one or two passes across a length of carpet, which then moves along to expose a fresh surface to the shears.

Curtis & Marble Machine Co. showed a selvage shear developed especially for goods woven on shuttleless looms. It is also suitable for box-loom fabrics.

Winsor & Jerauld showed a new high-speed tenter equipped with true roller tenter clips that reduce power requirements. Marshall & Williams showed a new heavy tenter with either level gear or worm and gear drives.

Famatex, represented by Robert Reiner, Inc., featured a clip rail with graphitized friction surfaces that eliminate lubrication problems. A new overfeeding apparatus is driven by a rubber belt made like a cog wheel.

Auxiliaries, Supplies

Aids to more production and better process control were everywhere at Atlantic City. Electronics plays a large part in heat-sensing, moisture control, and weft-straightening apparatus. Compressed air and hydraulic systems are used to power winders for tenters so that high-speed continuous operation is practical. Elimination of human error and labor reduction are becoming more and more possible.

An improved pressure system and a new roll made of wood fiber raise the efficiency of the 95 Wringmaster padder shown by Rodney Hunt Machine Co. Also shown by this company was a spreader roll that operates on a new principle.

Automatic edge-guiding has come to a cloth winder shown by Trumeter Co. Built by Maag Bros. (Switzerland), the edge guide makes it possible to roll the goods evenly without requiring an operator's close attention.

Shrinking or stretching in goods-in-process is noted continuously by a Shrink and Stretch Meter shown by B. F. Perkins & Son, Inc. The device is accurate within 0.2%. It can be set up on any processing range. Perkins also showed improved versions of its tricot Schreiner calender, a packaged let-off unit, and a winder.

Paramount Textile Machinery Co. showed a twist-setting machine that uses a vacuum to eliminate entrapped air in yarn packages. Steam thus penetrates the packages completely, uniformly, and quickly.

Tramp iron in fabric is effectively detected and processing machinery is stopped by a ferrous-metal detector shown by Cosa Corp. The unit can be equipped to serve only as an indicator of tramp-iron content. Cosa also showed European-made selvage guides and uncurlers, both self- and motor-driven. A steaming and finishing machine shown by Cosa is designed to straighten and even the width on tubular-knitted goods.

Processing conditions are accurately determined by Foxboro Co.'s series of instruments. The Model CHCR Cyclelog controller now controls the rinsing cycle and monitors the entire dyeing process.

Control of pH has been simplified in Foxboro's Dynalog Recorder, which does not require an intermediate amplifier. Other Foxboro exhibits were a new 160-sq.-in. diaphragm pneumatic motor for nip-loading, a laboratory recorder that records temperature and dew point on a single chart, and a system for metering and diluting chemicals.

Foxboro's newest item is a pneumatic speed transmitter that controls tension in processing. Two-speed sensing heads can be worked up to processing ranges to monitor input and output speeds to suit fabric and processing conditions.

Minneapolis-Honeywell Regulator Co., Industrial Div., showed its Moist-O-Graph IV system for detecting and controlling moisture in any stage of fabric processing, plus a low-temperature radiation pyrometer that measures surface temperatures without contact. Applications include dryer-speed control.

Taylor Instrument Cos. showed the Ful-Flex Single-Core Controller, which controls time and temperature in dyeing cycles, as well as instruments that operate from punched cards to provide repeat cycles of numerous process phases.

Static is quickly located by an instrument shown by Simco Co. It is eliminated by treating fabric or machinery with Simco's Neutrostat antistatic sprays. Simco also showed a moisture indicator based on the electrostatic locator.

Mount Hope Machinery Co. showed its Skew-Liner, an automatic filling-straightener device. Also displayed was Heinz Mahlo's Textometer RMS-IV, a moisture-indicating and controlling unit. Mahlo's Orthomat, sold by Mount Hope, is a combined weft straightener and bow eliminator that optically detects filling distortion and corrects it automatically and instantly.

Static elimination by ionization is provided by the Chapman Static Eliminator. The Statomatic model shown by Portland Co. is adaptable to many textile processes.

Cloth-room equipment of special interest included power pinking machines shown by Chandler Machine Co. and cut-off machines shown by Sjostrom Machine Co.

The Margin Meter, shown by Matrix Controls Co., Inc., indicates the width of goods passing over a perch. It can be supplied with a recorder for permanent records.

Birch Bros., Inc., showed a new

pad designed to handle nonwoven fabrics and a three-roll pneumatic automatic cut-off winder with hydraulic roll snubbers and an automatic transfer mechanism. Light butt-seam sewing machines were also shown—one a railway machine. An improved ball-bearing expander roll was also featured.

Steam-plant people were interested in a model heat exchanger shown by Patterson-Kelly Co. The exhibit stressed savings in fuel costs made possible by reclaiming heat from waste hot water.

Reinforced Fiberglas utensils suitable for many mill and dyehouse uses were shown by Carolina Fiberglass Products Co. Advantages are light weight, reasonable cost, and chemical resistance.

New seals feature a series of bearings exhibited by New Departure Div., General Motors Corp. Better retention of lubricant and reduced cost of assembly are features.

General Radio Co. showed an improved strobe light, the Type 1531-A Strobotac, mounted in a compact field case. Flash is of one microsecond duration, which permits detection of very small motions.

Electric Regulator Corp. displayed a variable-resistance control device distinguished by its capacity to transform slight mechanical movement into relatively large electrical action. The Regohm Transducer, as it is called, can be used to control tension, pressure, or lost motion in a wide variety of mechanical applications.

Inside or outside doors, operated by air or by pressure against them, were shown by Clark Door Co. Featured were a shock absorber door (with urethane bumpers) and a double horizontal air-operated door.

Test and Control Equipment—It's moving ahead fast

There was evidence at Atlantic City that every mill machine, atmospheric conditions in every department, and products from every machine are being controlled precisely with new and more accurate test and control equipment. Emphasis in most of the newer models is on electronic controls.

Counting devices are finding broad and varied uses in the never-ending battle against production costs and material waste. The devices displayed at Atlantic City show that the efficiency of each machine, mill department, and shift can be measured these days with exacting accuracy.

Three manufacturers showed their new wares in counting devices: Veeder-Root, Inc., Durant Mfg. Co., and WAK Industries. To take only one example, Durant showed an electric pick-counter system that gives complete production information from all parts of the mill at one centralized location. A model D-6 contactor is placed on each loom, spinning frame, or other production machine. All data are registered at the central location.

Instruments Everywhere

An instrument called Quil-Check, developed by West Point Mfg. Co. to pass or reject quills based on the quill's runout, was shown by Custom Scientific Instruments, Inc. An electronic instrument called Qualitester (speed, 950 meters per minute), used for counting imperfections and recording regularity of yarn, was shown by Qualitex. A yarn balance with three separate scales for reading yarn number, weight in grams and denier, and Tex numbers was shown by Mettler Instrument Corp.

The Pacific yarn evenness tester, which records average thickness and percent unevenness of yarn, roving and sliver was shown by Anderson Machine Shop, Inc. Foster Machine Co., in addition to its winding equipment, showed the Lindly line of yarn tensioning and testing instruments including the Electrotense, Dyna-Micro-Gage, and automatic yarn inspector.

Stellamcor, Inc., showed the following Marna instruments: Vibrascope for accurate determination of denier of any fiber sample of a length greater than 3 cms.; Electronic Unit No. 1, a bridge amplifier for converting transducer information into pen-recorder or oscilloscope readings; Strainometer for continuous measurement of elastic properties of continuous-filament yarns; Yale tension transducer for measuring yarn tension continuously; yarn filament counter for counting rapidly and automatically the number of filaments in continuous-filament yarns. Stellamcor also showed the W.I.R.A. fiber-diagram machine for testing fiber length in wool tops. This machine gives a complete analysis in 12 minutes.

Scott Testers, Inc., showed several instruments featuring fingertip controls and electronic devices including the CRE (constant-rate-of-extension) tester and the IP4 (incline-plane) tensile tester.

Durant Mfg. Co. showed Productimeters used for counting bobbins on quillers and bobbin strippers and for measuring yardage on drawing frames and other machines requiring predetermining counters. A Neptel yarn-imperfection counter and three Micronaire instruments, including a pocket-size Micronaire that needs no airline connection, were demonstrated by Sheffield Corp.

A viscometer measuring element (Model M7A) for slasher size that's simpler and more compact than previous models was shown by Norcross Corp. It is applicable to size boxes and storage kettles and is used with Norcross recorders to provide complete, permanent viscosity record of all sizing processes.

An instrument for measuring relative humidity and transmitting the corresponding proportionate air-pressure signal was exhibited by Taylor Instrument Cos. The instrument is simple, dependable, easy to use. Two models provide adaptability to room installation or air-duct installation.

Motions Observed

An electro-optical stroboscopic tachometer and observation instrument for measuring and controlling spindle speed and studying operations of ring travelers, bobbins, looms, knitting machines, and similar uses was exhibited by Lenkotex Co., Inc. In slow motion there's a direct speed reading from a calibrated dial of 200 to 16,000 rpm. with accuracy of ± 1% of scale reading.

The Harvey Static Charge, an in-

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strument with which inexperienced employees can quickly measure the static charge at any phase of production, was introduced by Anderson Machine Shop, Inc. Features are single-hand operation, large scale reading, either polarity obtainable, and remote-control monitoring if desired.

The Manra Warp Tension balance, a self-contained mechanical instrument that compares the tension of the warp sheds in looms during weaving, was shown by Stellamcor, Inc. Only 2 or 3 minutes is required to insert the instrument into a warp and take a reading. Designed primarily to reduce rep-like filling bars in plain weaves on continuous-filament man-made fibers, the instrument also completely eliminates faults in spun-yarn warps of natural fibers.

Fabrionics Corp. showed instruments for tension control and testing: an electronic thread-tension gauge, an adjustable electromagnetic yarn-tensioning device for most textile machines, meter for measuring coefficients of friction.

Uster Corp. showed improved versions of its integrator, evenness tester, imperfection indicator, and other instruments and displayed the West Point cohesion tester.

Leesona Corp. showed a portable in-process evenness tester for card sliver.

Forte Engineering Co. came to a textile show for the first time with several testing instruments on its shelves. Its moisture-content analyzer tests a 20-oz. sample of bulk fibres in about 30 seconds. Tests can be made in the mill by production employees as part of their routine jobs. Forte also stressed its service program.

Services and supplies—Getting better and better

Sophistication and mechanization are moving in on housekeeping, power, lubrication, and other plant services.

Floors Cleaned

G. H. Tennant Co. demonstrated its new heavy-duty Model-E floor machine that weighs only 95 pounds yet cleans a 21-in. path. Vacuum picks up dust and light soilage. It has a 1-hp. electric motor. A second Tennant sweeper, Model 40-E, is battery-powered, cleans a 34-in. path, and turns in its own tracks. A brush-and-vacuum system sucks fine dust into a 2,200-sq.-in. filter. Floor seals, finishing cylinders, and other cleaning materials were also in Tennant's booth.

Materials Handled

National Vulcanized Fibre Co. showed a line of Kennett materials-handling equipment. This lightweight, tough plastic material is used in both trucks and roving cans in a variety of sizes and colors. One truck, Unilevel, has a load-leveling mechanism. There's also a steaming box made of glass fiber.

Power Units Improved

A line of speed reducers capable of transmitting up to 80% more horsepower than its previous reducers was displayed by Cleveland Worm & Gear Div., Eaton Mfg. Co. Also displayed were variable-speed drives with built-on motors.

A series of electrical and mechanical adjustable-speed drives ranging from ¼ to 200 horsepower was featured in the booth of General Electric Co. A compact, packaged, all-electric speed variator, Kinatrol, is for small range drives, individual motors, finishing machines, drive fans, warpers, and slashers.

A coil for heating and cooling, shown by Dean Products, Inc., is made in five widths of 12 through 29 inches. A second version of the coil is made in stainless steel for longer service life.

Control relays (a.c.) operated by opening and closing the circuit to the operating coil through a pilot device such as a pushbutton or limit switch were shown by Allen-Bradley Co. This manufacturer also exhibited its Style T pressure control with oiltight enclosure.

A variable-speed drive with twin strands of single-roll chain operating between a pair of facing wheels with a floating disk was demonstrated by Link-Belt Co.

A shaft-mounted speed reducer (Moduline) for card drives was shown by Westinghouse Electric Corp. This drive is furnished in ¼ to 40 horsepower.

Another Westinghouse development, Guardistor motor, gives motor protection from winding temperature alone, rather than being actuated by line currents. Roof ventilators are one of the best textile applications of this motor.

Diehl Mfg. Co. showed its Auto-Tension Control to maintain constant tension on yarn on spools. Specifications are: (1) single-phase, 115v., 60 cycles, 1 amperes; (2) maximum spool diameter 4¼ ins.; and (3) adjustable tension range 1.5 to 140 grams. Diehl also showed its new Electropneumatic positioning drive. A machine application at the show was the Whitin roving frame. The drive has Sensi-Matic jigging, start, manual shutdown, and positioning stopping.

Lubrication Automated

Automatic centralized lubrication was almost everywhere at Atlantic City—from yarn preparation through weaving and finishing. And four lubrication-manufacturers showed new or greatly improved systems: Lincoln Engineering Co.; Alemite Div., Stewart Warner Corp.; Eaton Mfg. Co.; and The Farval Corp. Claims by manufacturers are specific 15 to 25% increases in machine efficiency from higher speeds; continuous supply of fresh lubricant, which reduces operating temperatures 5 to 15 F.; ends down on wool spinning frames reduced 90%; complete elimination of traveler chatter; no more waste of machine and other lubricants and reduced spoilage of yarn.

Reprints of this article are available at $1 per copy. Quantity prices on request. Address inquiries to Reader Service Department, Textile World.

FUTURE GROWTH OF COMPANY is discussed by General Superintendent Mason and Vice-President Torrence (right). New addition will occupy company parking lot in background.

How Superior Stays Superior

Four Ways—

(1) Ability to shift yarn numbers fast.
(2) Good equipment utilization.
(3) Consolidation of three small plants.
(4) Modernization of machines.

TWENTY YEARS without one day of production cut back. That's the record rung up by Superior Yarn Mills, Inc. (headquarters: Mt. Holly, N. C.)

During most of those 20 years, Superior has been running on a three-shift, six-day basis. Customers of the mills like what they get. Many of the biggest buyers have been buying Superior yarn for 30 years or longer.

Superior's main plant, its Tuckaseegee mill, started operations in 1883. From that year Superior dates its long record of continuing successes.

How has this compact company managed to stay competitive at just the time when so many similar organizations have gone under—or been swallowed up by bigger companies?

Vice President-Treasurer C. K. Torrence, Jr. has an idea that Superior's quality reputation has been the key. "We've always made top quality yarns", he explains, "and we stress versatility of yarn numbers —along with customer service".

Torrence says it would be much simpler for Superior to produce just a few standard numbers. But, he says, Superior spins from 16s to 60s, single and ply, with putups on cones, tubes, springs, skeins, ball warps, and section beams. The Superior formula: "We give our customer what he wants as fast as possible—regardless of any inconvenience to ourselves".

. . . Turn the page

COMBERS have been equipped with 15x42 coilers and cans, wide creels have been enlarged to handle 30-lb. laps. Here, Mill Superintendent York checks the combing operation.

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President C. K. Torrence, Sr. lays down two rules for quality:

1. The mill uses "the very best Strict Middling San Joaquin California cotton."

2. "Every bale is Micronaired".

Micronaire average is closely controlled throughout the mill. Quality control checks are made at every process by operating personnel and by the quality-control department.

"We keep our processing equipment up to date. Right now we're consolidating the three plants into one here at Mt. Holly. New machinery is being installed where needed," Vice President Torrence adds.

Another reason for Superior's success, according to J. C. Mason, general superintendent, is that for many years the mill has been able to run its spinning frames at speeds comparable to the highest speed produced by the newest and most advanced frames on today's market.

"One reason for our high spinning speeds is that natural relative humidity stays at 50 to 55%. I don't know how we maintain this figure," Mason says, "unless our location on the banks of the Catawba River conditions the air in some special manner. We have humiducts and air changers but no refrigeration or air washers."

Superior Yarn Mills formerly consisted of three plants located at Mt. Holly, Long Island, and Statesville—all in North Carolina. The Long Island plant closed last October and consolidated with Tuckasegee Plant, which is the Mt. Holly unit. East Monbo plant at Statesville will close by the end of this year. Most of the equipment will be moved to Mt. Holly.

An 18,000-sq.-ft. addition was recently completed to house 3,528 spindles and other equipment from Long Island. Another 25,000-sq.-ft. addition has been started to take care of the East Monbo equipment.

Coming—Fewer Spindles

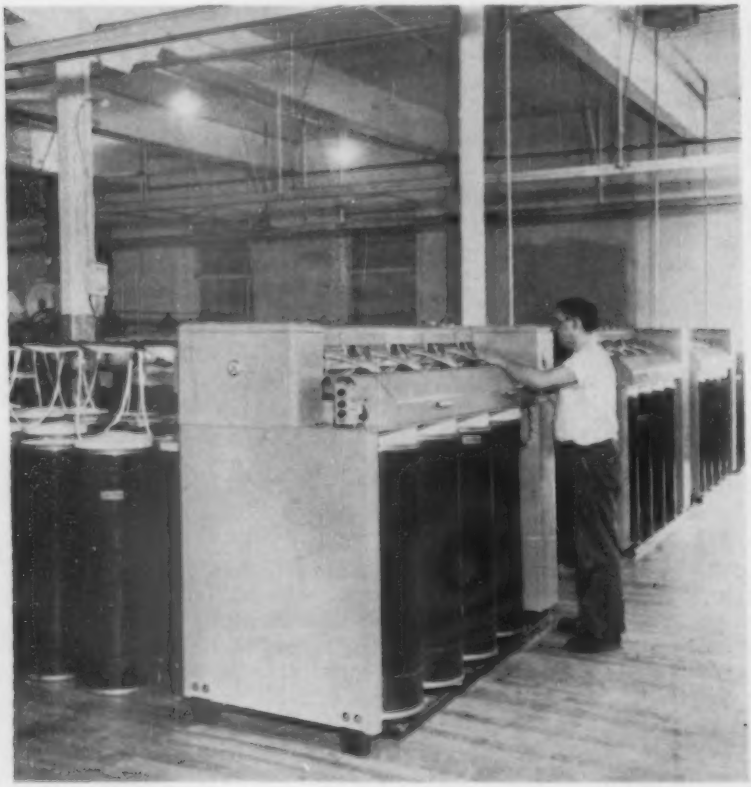
When the move is complete, spindles will have been reduced from approximately 25,000 to 18,000 because of higher operating efficiency. Operating personnel already has been cut from around 400 to 320. Further reductions will follow when the consolidation is complete.

Overhead cost has been reduced substantially by the elimination of one superintendent and several overseers along with clerical and maintenance personnel. The present supervisory staff at Tuckasegee (with Glenn S. York as superintendent) will manage the entire future operation.

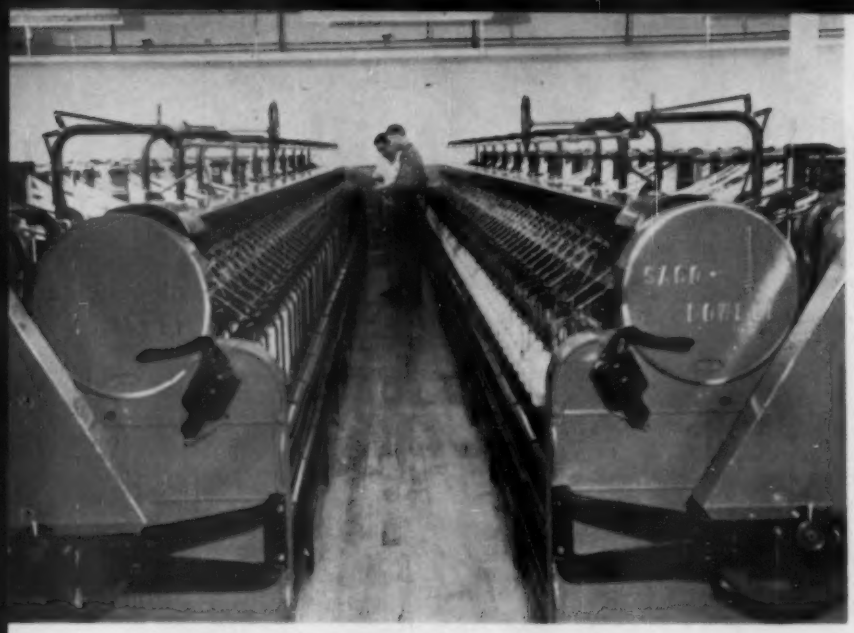
Superior accomplished the Long Island move with minimum trouble. The plant closed down on target date with every pound of yarn on hand sold and ready for shipment. Two days later the spinning was torn down. The next day it was moved. The whole job was finished in a few weeks. Payoff: Practically no lost production.

More Bales for Blending

At the Tuckasegee plant today's processing set-up includes opening equipment that feeds two lines of one-process two-beater pickers. Superior plans to enlarge this de-



DRAWING FRAMES follow the combers. Machines run at much higher speeds and put more sliver in the can than the old frames.



ROVING FRAMES get close check by Overseer Lonnie Candler (right). Machines operate at about 750 rpm.

partment so that 60 bales of cotton can be laid down instead of the present 20 bales. The only recent change in the opening line was the installation in tandem of two Super-Jet cleaners. The widely known Superior cleaner was developed here over 30 years ago by General Superintendent V. A. Howard, who is now retired. The original model was in use at the Long Island plant until fairly recently.

In the card room the 13½-oz., 45-lb. picker laps are processed on 95 cards equipped with Abington vacuum strippers. Parks-Cramer overhead cleaners are used. Future plans call for the installation of large coilers and cans.

Following the cards are 48 deliveries of Saco-Lowell four-roll breaker drawing. Next come two Saco-Lowell 10½-in. lap winders. Twenty ends are fed into each to produce 30-lb. comber laps.

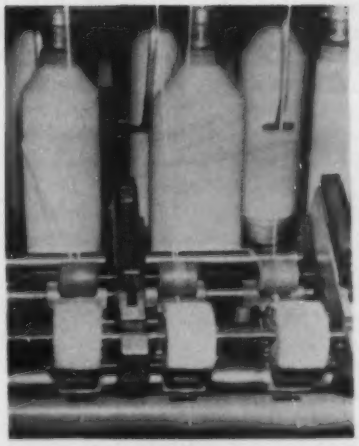
New Drawing, Roving Frames

The stock then goes to 13 Saco-Lowell combers, which are followed by 12 deliveries of new Versa-Matic finisher drawing and seven new Saco-Lowell FS-2 roving frames. Combers have been beefed up with 15x42 coilers and bigger creels.

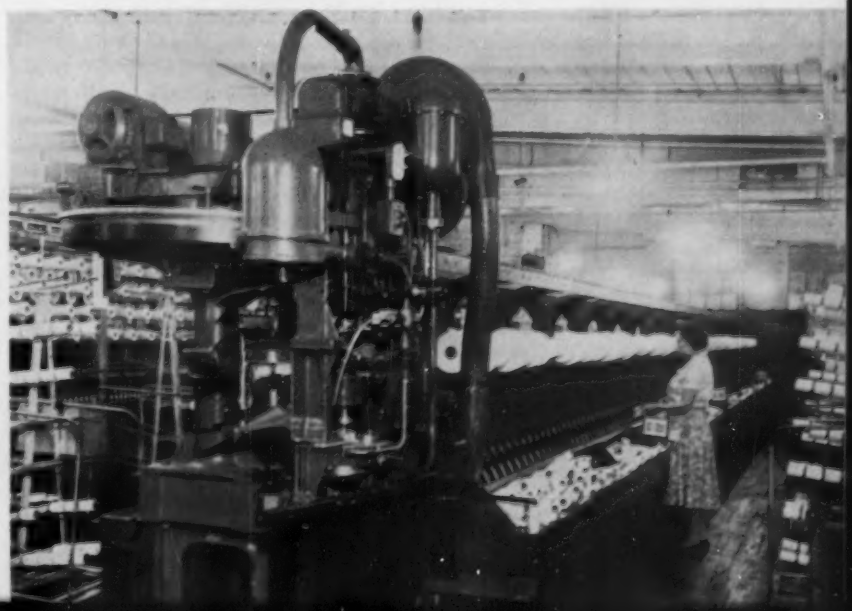
In the spinning department Superior has rebuilt 54 frames from the roller beam up. All frames are equipped with either CleanAlign or Unitrol drafting systems, Pneumafil suction cleaning, and umbrella creels. Parks-Cramer overhead frame-and-ceiling cleaners are used.

At present Superior has one Type CC, 270-spindle Barber-Colman spooler in operation. Another one is on order. This machine probably is the biggest cost cutter in the mill because two operators per shift can spool approximately 2,500 pounds of stock. Cost of this operation was cut 50% by installing the spooler. Superior operates 18 modern twisters with a total of 4,536 spindles, six 120-spindle winders, and a high-speed section-beam and ball warper.

Other recent improvements: a new boiler house and machine shop. In the future: a new office building.



SPINNING FRAMES (54 of them) have been rebuilt from the roller beam up. Superior added Unitrol and CleanAlign drafting and Pneumafil suction cleaning when rebuilding.



270-SPINDLE SPOOLER puts up 2,500 pounds of yarn per shift, has cut spooling costs 50%. Two operators per shift run the machine.

How Men in the Mill See

Here's a report from the men who know—the men who fight the battle of production day in, day out. It's your chance to cash in on their experience with new equipment, new materials, new problems.

ALABAMA TEXTILE Operating Executives put slashing and weaving under the microscope at their annual spring meeting May 7, at Auburn, Ala. They concentrated on seven major topics:

1. Starch Converters

Three mills now use the new High-Temperature Converter (HTC) described in TEXTILE WORLD, Nov. 1959, p. 157. Here's how two of them size up experiences:

Experimenting with compounds—"We're using the HTC in our slasher room with Staley HTC K5-104 starch. Our best results are with a melted paste compound. We've made no change in the method of storing paste compounds with our new system. But we must store liquid compounds at room temperature. Our warp size content is the same as with our older system, but we had to change squeeze-roll pressure to adjust for differences in size pickup. Hard size has been almost eliminated, and we have no trouble with roll marks in our warps. Size-viscosity measurements are uniform.

"There's no noticeable change in shedding. But shedding did increase with liquid compound. Our experimentation has increased steam requirements a bit. To date we've had no increase in slasher or loom efficiency. We've made no changes in the relative humidity in our weave room.

"*Payoff*—We've changed from thin-boiling to pearl starch."

Solving problems—"We installed an HTC last November. We had many problems at first because we installed it when we began a new fabric, (136x60 combed broadcloth) and installed high-speed slashers. We now have an automatic slurry-mixing system, and size viscosity is even. We plan to add a pump for either paste or liquid. We put a wax in the liquid, and it works well.

"We store size over the weekend—cut off steam at 6 a.m. Saturday and leave the paddles running. Then on Monday morning we cut on the steam. The size is the same viscosity as on Saturday. Every four weeks we let the slurry in the tank run as low as possible at shutdown time. Then we drain the slurry tank and clean it.

"*Payoff*—Weave-room efficiency is now the highest ever."

2. Overwaxers

Two mills are getting excellent results from overwaxers. Here's what they report:

Weave-room efficiency up—"Overwaxers at slashers have reduced warp stops in weaving 20%. Accordingly weave-room efficiency has been increased 2%. (We weave broadcloth with 100 ends per inch and above from 31½s yarn.) We've also been able to cut relative humidity 2%. We now run 87% r.h. in summer, 85 to 86% in winter.

"We put the overwax on the dried warp at the front of the slasher near the delivery roll. We use a wax with a high melting point. It congeals very fast on the yarn. We apply it at 180 F. We add 0.17% wax by yarn weight. If we add over 2% the drop wires will stick up at the loom. Cost of overwaxing is $4 per 6,000 pound of yarn.

"The wax is applied with a stainless-steel roll turned by a chain and sprockets. The overwax lubricates heddles and shuttles at the loom, contributes to weave-room cleanliness. We used to wipe off the tops of our looms. Now we only blow them off with compressed air. We have new floors in our weave rooms (maintained with the Tennant system). The overwax sheds on the floor and helps keep the floors clean and polished."

Still evaluating—"We've been using an overwaxer satisfactorily for several weeks. The wax is put on the wet warp. We're still evaluating results. In slashing, the yarn breaks apart better at the separating lease rods.

"Liquid wax contains 30% fat. We're now applying 1% liquid wax, but we cut the fat in the size kettle to a minimum. We're told by the wax manufacturer (Southern Sizing Co.) that there's no critical point in the maximum amount of wax that can be added; 4.6% wax content is said to weave satisfactorily."

3. Size Pickup

Variation in size pickup between full slasher speed and creep speed is always a problem. But now mills are taking steps to solve this problem. *Solution*: Reduce pressure on the squeeze rolls at ceep speed. Here's how four mills are attacking the problem:

Pressure halved—"We cut squeeze-roll pressure to one-half at creep speed. Before we did this, we had 2% less pickup at creep speed. To reduce pressure we added a three-way solenoid and a squeeze-roll-pressure control valve to slashers. To each slasher with two rolls we added a two-pole relay, with two normally closed and two normally open contacts. The valves are preset to desired creep-speed pressure. When the slasher reaches a given speed, the predressing-roll and squeeze-roll pressure is dropped to a preset pressure with the control valve on a bypass line.

"From samples checked with running speed at 30 psi. at the squeeze roll and creep speed at 15 psi., we get almost the same pickup:

30-psi., running speed	15-psi., creep speed
13.93% pickup	13.79% pickup
13.84%	13.83%
13.47%	13.98%

"We have West Point multi-cylinder slashers with Griffiin size applicators. Size concentration is 14.3 oz. of solids per gallon."

Slashing and Weaving Today

Even pressure—"On our 9- and 11-cylinder West Point slashers, size pickup is decreased about ½% when running speed of 85 yards per minute is dropped to creep speed. We have Griffiin applicators. We add 16 ounces of solids per finished gallon. Squeeze rolls are rubber-covered. Pneumatic roll loading gives even pressure from end to end."

Deadweight abandoned — "We made a test of size pickup. At 105 yards per minute pickup was 12%; at 25, 12½%. When we used dead weight only on the squeeze roll at 25 yards per minute, pickup was 14.2%. We try for 12% pickup.

"Slashers are 9-cylinder West Point machines. Size is made from 60% thin-boiling starch and 40% modified pearl starch—12 ounces per gallon of finished size."

Problem unsolved—"We have about 1.75% variation in size pickup from running to creep speed on Uxbridge hot-air slashers. We haven't been able to correct this variation. We have two types of size boxes: Tower with double rolls and Griffin with single rolls. Rolls are rubber-covered, have pneumatic loading. We use about 17 ounces of solids per finished gallon."

4. New Check Controls

Here's how mills see them:

Better shuttle boxing—"The Draper No. 14 check control has improved shuttle boxing. No trouble from changes in temperature or relative humidity. No trouble for loomfixers in fixing the controls. Maintenance cost is slightly higher than for conventional checks. On 90-in. XP-2 looms running 142 ppm., checkstrap life with the No. 14 control is 1,504 hours. We also have an installation of No. 14 check controls an Page check controls on 50-in. X-2 looms running 172 ppm."

Humidity no problem—"We've been running a No. 14 check control on test for six months on an 82-in. XL loom. It's effective. It's affected less by changes in humidity and temperature than our conventional checkstraps. Loomfixers like it. But adjustments do require more time. Though the inside strap does have to be replaced, it lasts longer than a conventional checkstrap."

Problems solved—"We have 300 looms on Page check controls, 150 of which have been running nine months. At first we had trouble with the checkstrap wearing at the battery end. But no more—we've arranged it so the adjusting finger rides on a piece of leather in place of the checkstrap.

5. High-Density Pickers

These are getting a thorough test. On C&K looms, they're in. But on the higher-speed Draper looms (X-2 at 190 ppm., for example), there's some trouble with shuttle boxing. Here's what one mill reports:

Few replacements—"We have 48 C&K 50-in. C-3 terry looms running with high-density pickers on the drop-box end. In eight months we've had to replace only 10 pickers. Loom speed is 154 ppm. Average bushing life is three months. We're now putting these pickers on other types of looms."

Other mills report as follows:

• "We've been testing plastic pickers on 95 looms (60-in. X-2's running 153 ppm.) for about two months with good results. Picker life is about double that of old pickers.

• "We're running high-density pickers on 64-in. XP looms running 140 ppm. They're satisfactory, but we haven't used them long enough to determine picker life."

• "We've used them on 60-in. X-2 looms running 160 ppm. for some six months. Some of them get loose on the picker sticks."

• "We've had only limited experience with them. Those we tried gave trouble in boxing the shuttle. But our tests show that they last about twice as long as conventional pickers. They were tested on 64-in. X-2 looms at 160 ppm. and on 50-in. X-2 looms at 172 ppm."

• "We tried 200 of them on X-2 looms running 191 ppm. We couldn't keep the shuttles boxed. But we use them on the left-hand end of E-model looms running 17 ppm. with good results."

• "We've used them on 291 multi-shuttle looms for 15 months. Bushing life is four months."

6. Linkage Parallels

Three mills report gains in new linkage-type parallel motions:

• "We've used them three years on X-2 looms at 191 ppm. without any maintenance."

• "We've been running 338 linkage parallels for a year—288 on 60-in. X-2 looms at 160 ppm., and 50 on 46-in. X-2 looms at 184 ppm. Fixers have 77 looms. We haven't increased loom speeds with the parallels. Gains: lower supply costs, less maintenance, less downtime from breakdowns, longer shuttle and picker life, smoother picking, and easier paralleling for pickers."

• "Linkage parallels pay off in improved shuttle boxing, longer picker life, and more accurate control of picker-stick power. We're experimenting with higher speed on 81-in. L-model looms equipped with linkage parallels."

7. Synthetic Binder Covers

"We get good results from a new synthetic binder-cover material on wood binders," says one mill. "Average shuttle life is 7,416 hour. On E-model looms running 164 ppm., plastic shuttle life is 33,000 hours. We've replaced only two shuttles. On C-5 looms running 154 ppm., plastic shuttle life is over 5,000 hours. Bobbins are 8 in. long."

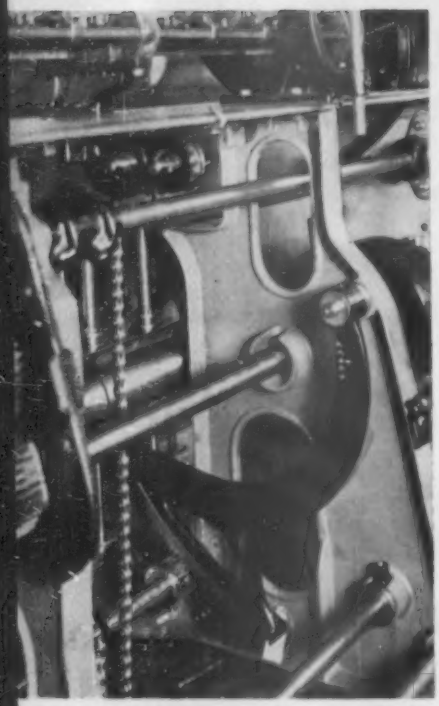
Other mills report as follows:

• "We're testing synthetic binder covers. Apparently the material lasts longer than leather. It boxes shuttles properly."

• "We ran samples on X-2 looms with plastic shuttles. Results were not good."

• "We have two looms with synthetic material on the binders. Shuttles are plastic. Covers over six months old still look good."

• "We've run two types of synthetic binder covers. One wore the shuttles because of metallic particles in the material. The second type kept shuttles from boxing correctly. We used dogwood shuttles with both.



JERKY CARRIAGE MOVEMENTS are caused by binding of carriage glides, wear on the quandrant slide and rolls, and unbalanced weighting. Poorly built bobbins are the result.

Mill Check-Up—Part 6

How to Size Up

Step 6 on your daily tour of the mill will take you into the roving section of the card room. From a man who knows, here's a plan that will speed this important part of your inspecting.

By A. L. LANDAU, Assistant General Manager,
Replacement Parts Div., Saco-Lowell Shops, Greenville, S. C.

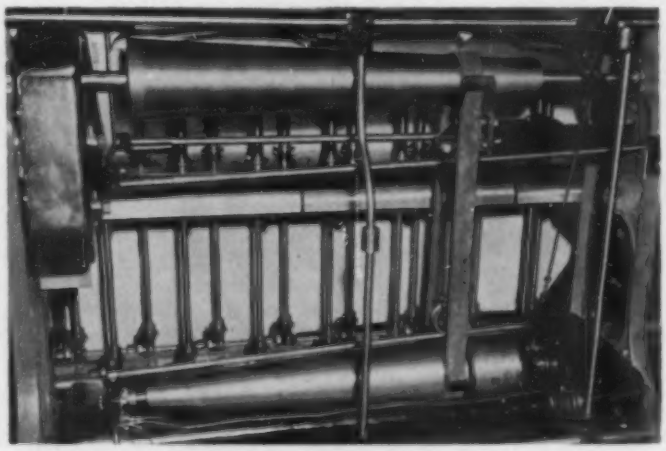
YOUR BEST TOOL as a mill-operating executive: a fast, efficient way to supervise operations.

Your major problem: spotting trouble in its infancy—and stopping it before there's any loss in quality or production.

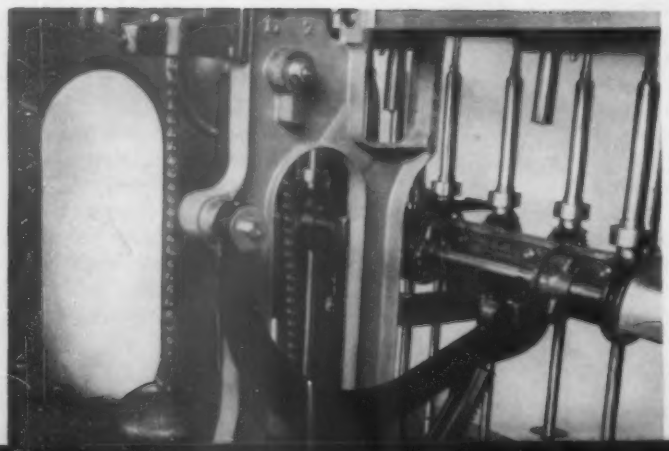
Best way to shape this tool and solve this problem: A set method of checking—a method that will lead right to the root of trouble.

On your daily tour through the mill you've just checked drawing (TEXTILE WORLD, June 1960, p. 46). It look good.

Now you're ready to take a look at roving. You may check only one or two frames a day. But you select



LOSS OF TENSION CONTROL comes from worn cone belts, greasy cones, or inaccurate starting points. Cone-belt tension should be checked often to assure even roving.



WORN BOBBIN GEARS or bobbins set improperly on spindles cause bad running work at roving and spinning. Damaged flyers are another cause of poorly built bobbins.

Roving Operations

them at random. This way, nobody —overseer, fixer, operator—will know which you'll check. Result: Everybody always on his toes.

Scanning the Roving Room

You stop at the alley, look down the roving frames. You'll get a good idea of how the room is running just by stopping here for a minute. What do you see? For one thing, walls and overhead are clean. No burned-out fluorescent tubes. Floors are swept under the frames and in the aisles too. No overflowing cans for waste or reworkable waste. No mixed waste.

Good housekeeping — keeping room and equipment clean—is one of the top clues to performance and efficiency. It's easy to see if people are doing all they should do. For example, you can instantly tell whether frames have been cleaned on schedule If your people don't clean them regularly, fibers will gradually pack into bearings, soak up the lubricant, bind, and finally cause a worn bearing. Fibers also pack up into bobbins, spindle gears and other gears, sprockets and chains—make them run tight and skip

On the frame itself, particularly in the area of the drafting system, lint accumulations threaten both quality and production. Lint dropping into the fibers as they are drafted will cause slugs. Larger clumps will cause the ends to come down either at the flyer or later, when spinning. Here, too, lint packed around roll bearings will siphon away oil and lead to rapid wear.

A clean, orderly room shows high efficiency, low labor turnover, and few seconds. Same for the individual frame. A clean frame is well kept —settings correct, top rolls buffed, and the balance of the frame properly adjusted.

From here you can look right down the frames and sees which ones are running, which are stopped —whether there are any ends down —whether bobbins on the frames are of different sizes and thus whether ends have been coming down—whether the tender has pieced ends up again immediately or let them stay down while the frame ran.

You can also see whether frames are being creeled according to regulations. Perhaps you use a planned method of creeling in roving frames, which increases frame efficiency and improves quality. Figure about 9% to 10% as downtime for roving—including picking the flyers once per shift, cleaning doffing, and all other stops as well as end piecing. Incidentally, figure about 10 ends down per 1,000 roving-spindle hours.

Getting Clues From Cans

The problem is to put just enough sliver in the can at the draw frame so that you can make a certain number of full doffs at the roving. Theoretically the cans would be empty when the frame knocks off—for example, at every third doff. Some mills are using predetermining yardage counters and knock-off motions at the finisher drawing. They hit the balance easily.

It isn't good to have the tail ends of sliver in the bottom of the cans go back to the opening room as reworkable waste. Granted, that's the easiest way to get rid of it. But it means you process the fibers again. This is costly. And it weakens the fibers, creates a quality problem. Some people tackle this by taking all the tail ends and piecing up one roving end where it can be watched. This is better. Even so, one can may have as many as 20 piecings, which can cause thick places that will be ends down in the spinning room. Another problem, too, is that the sliver is likely to tangle when it is handled in short lengths. An operator with six frames to clean and creel won't take to dump cans or make good piecings.

Good idea: Calculate production and package weight and thus set up a schedule of creeling that puts the piecings just before the doff. That way, you'll have the top layer of roving on the bobbin, where piecings can be easily seen and picked off.

As you walk along the line of frames, you should see cans creeled in neat, orderly rows, and fanned out so that the sliver travels the shortest possible distance. There ought to be enough room between the rows of cans for the operator to move into the back of the frame without moving the cans.

Cans are pretty important. The sliver has to drag over the edge of the can. If the edge is rough it can cause tagging or pull the sliver partially apart, thus ruin the evenness of both the roving and the yarn. Checking should be done so that the sliver from one can doesn't ride on the sliver from another can because this, too, can cause sliver unevenness.

Incidentally, a dented can or a can with a rough hole in the side will cause the sliver to catch and this will also make sliver uneven. It would be a good idea to keep a number of extra cans on hand. Figure you should have 2½ cans per roving spindle. This is the total for cards, drawing, and roving.

Checking Up on Roving

Now you go to the end of the line of roving and down the alley between the two lines of frames. The frames seem to be making good roving. But maybe you haven't checked one lately. Single it out. Watch it run for a minute to see if you can detect any defects. At least watch it run through four or five reversals of the carriage.

The roving frame is one of the hardest machines to adjust. Big problems are building the bobbin and controlling the tension. Both of these actions require coordination of practically the entire machine. If any

. . . Turn the page

. . . *Begins on page* 66

component is badly worn or poorly adjusted, it will affect the final product. Usually, poor performance can be traced to worn gearing or improper gears being used. Cone-belt slippage or not racking the frame all the way at the end of the doff will cause tension trouble.

If you find a frame running badly, always stop it off, make a fast check of flyers, spindles, bobbins, and spindle gearing, then follow through the compound up through the front-roll drafting to the drafting element. Sometimes you'll find the flyers spreading. At other times the trouble will be in the bobbin itself.

Getting the Right Tension

A frame running with the right tension will have the ends sagging slightly between the front rolls and the flyers, and there will be a little flapping. Incidentally, you should establish standard tension gears for each type of stock and roving size. Then see to it that only the overseer can authorize a change of the tension gear.

Before the tension gear is changed, have the bobbin checked (a small bobbin will cause the ends to run slack). If the tension is corrected because of small bobbins, then the other ends running on bobbins of the right size would be tight and this would cause stretch. It's a good idea to use a bobbin gage. If you find small bobbins, try to collect them. If you have a whole frame, use them and make the necessary adjustments.

Worn flyers may slip on the spindle and cause slack tension. Of course, any slippage in the spindle-drive gear train will also cause the tension to drop. When this happens you should have the bobbin gear shafts and the spindle gear shafts cleaned and have the gears picked free of the packed masses of lint and oxidized oil that forms in the teeth. When you do this, have the bolsters swabbed out with a wire brush and kerosene.

Of course, the flyer must be checked closely. The slot in the flyer is likely to give trouble if the tensions are slack, because the roving will fly right out of the slot. When this happens, the flyers go back to the manufacturer for repairs. It's too tricky a job to fix slots yourself.

Basically, tension is controlled by the relation between the delivery speed of the front roll and the surface speed of the bobbin. A perfect tension would have a ratio of 1 between the two.

When the surface speed of the bobbin exceeds the delivery speed of the front roll, the tension will build up. You can control this by manually changing the cone belt during the doff. It isn't a good idea to have tenders doing this and try to set the frame correctly. If a tender is changing the cone-belt position, have the fixer check the teeth and condition of the taper gear and rack gear, tension gear, the starting position of the cone belt, and the cone belt itself. Wear of any of these parts can cause either skipping or binding, and ruin tension control.

Incidentally, a dirty or oily cone can cause slack tension because of slippage. Also make sure that the fixer never puts on a cone belt that is too wide, because the drive would then be at a different position on the two cones. This would cause roving to stretch at the pressure of the flyer. A 2-in.-wide belt is correct.

Controlling the Lay

If you change roving size, check your lay gearing. There's always a question of how close together the layers of roving should be placed on the bare bobbin. The lay gear controls the speed of the carriage and therefore the distance between each warp on the bobbin.

One thumbnail rule: There should be enough distance on the first layer so that you can see the bobbin between the strands. This distance should be about half the diameter of the strand itself. This wind will allow the alternate layers to fall between the two adjacent ones without crowding and tangling.

This may sound like too much distance. But remember that the pressure of every added layer changes the shape of the layers beneath it. The pressure causes the cross-section of the strand to become elliptical instead of circular. The long axis of the elipse governs the amount of room that the layer will occupy lengthwise on the bobbin. For these reasons, it's best to allow a little extra space between the layers rather than crowd them on the bobbin barrel.

Checking Up on Drafting

Now it's time to check clearer covers and the drafting element. Stand at the end of the frame and watch the roving coming from the front rolls and traveling to the flyer. This way, you can get a good idea of the condition of the drafting element. You see the carriage traversing smoothly and changing without dwelling, so you know the compound and the third Sampson builder are in good shape. The lay seems about right and the bobbins are building nicely. You don't see any flyers vibrating or clicking. The frame looks clean. You can see that it has been lubricated.

All that remains for us to check is the drafting itself. Of course, the quality control inspector will carry out the routine checks on sliver and roving, weight, and evenness. You'll get daily reports on this. But as part of your regular daily personal check, always look over the drafting element pretty closely. You can tell from the roving as it is being twisted if the rolls are set correctly. If there is any question, have the overseer check settings.

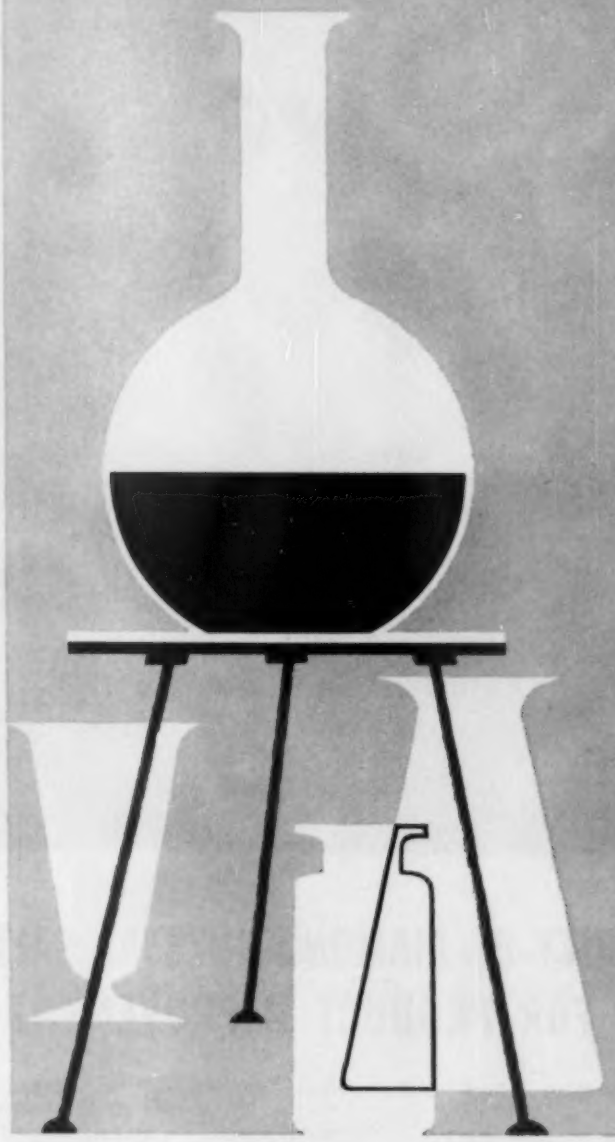
You are mainly interested in straightness of steel rolls and the condition of the cots of the top rolls. Steel rolls that have any runout caused by lap-ups or accidents can cause unevenness. Top rolls will also make uneven roving if that traverse motion is not functioning across the entire working surface of the roll, because the stock will hollow out the roll. When this happens, you'll get uneven drafting.

Also look for cots that have been cut or nicked by a tender clearing a lap-up. Make sure that the spring pressure is fully down and that none of the pressure system is binding. If the spring weighting units are binding or misaligned, then there will not be enough pressure for even drafting.

Finally, a quick glance will show whether the frames are being cleaned and oiled on schedule. You can tell by the amount of waste on the clearers. It's a good idea to insist on checking clearers and picking them often enough to keep clearer waste from accumulating and dropping into the roving. This can cause a real drop in efficiency and quality because of the slugs that are made.

Glytex CMC

by KEEVER



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Textile World

CHEMICAL TREATMENT AND FINISHING

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News of the Month in . . .

Textile Chemicals

Now—Waterproofing Material "Breathes"

A long-time goal of finishers—to produce a porous waterproof fabric—appears to be close to reality.

The new process is based on polyethylene that has been mixed with starch and then converted into film by the usual calendering or extension methods. The film is treated with boiling water, which ruptures the starch molecules, which in turn break up the continuous film phase. Then the gelatinized starch is leached out by a treatment with sulfuric acid, leaving a polyethylene film that will transmit water vapor at up to 80% efficiency.

The pores are calculated to be in the 8- to 12-micron range, and the hydrophobic nature of polyethylene resists the passage of water in liquid form.

By varying the type and the amount of starch, a series of formulations will fit the porous polyethylene films to many industrial purposes. Possible uses (besides textile applications) include filters, dialysis equipment, and water-purification apparatus.

P4 Flame Retardants Win Awards

Phosphorous compounds discovered and developed at New Orleans by U. S. Dept. of Agriculture scientists brought a Superior Service Award to three chemists of Southern Utilization Research and Development Div. The group award went to Leon H. Chance, George L. Drake, Jr., and Wilson A. Reeves.

The best compounds that have been developed so far are tris (l-aziridinyl) phosphine oxide (APO) or tris (aziridinyl) phosphine sulfide (APS) in combination with tetrakis (hydroxymethyl) phosphonium chloride (THPC).

Besides providing top flame resistance, these chemicals require lower add-on than earlier durable-type flame retardants and have good resistance to laundering and very little effect on the hand of treated fabric.

The inventors have also found that the APO- and APS-THPC treatments impart resistance to mildew, rot, and shrinkage. APO in itself provides excellent crease resistance.

Although the process is patented, it is available to American manufacturers under a USDA license at no charge.

Caustic Helps Polyesters Hold Resin

Polyester-fiber fabrics take resin finishes better, are more crease resistant, if the fabric is first treated with caustic, according to Courtaulds Ltd.

In a typical process, scoured goods are treated for five minutes in a boiling 3% solution of caustic soda and are then washed, soured in acetic acid, rinsed, and dried.

To get a wash-fast stiff finish, the goods are then padded in a 22% solution of a methylated melamine-formaldehyde or a methylated urea-formaldehyde precondensate. Ammonium chloride is used as a catalyst.

The fabric is finally dried and cured at 200 C. for 6 minutes.

Bisulfite Produces Permanent Pleats

The simplest process for making permanent pleats or trouser-leg creases in woolen fabrics appears to be treatment with sodium bisulfite.

M. A. Wolfram and J. B. Speakman, reporting in Journal Of The Society of Dyers and Colourists,

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Textile Chemicals

. . . *Begins on page* 73

Vol. 76, No. 3, pp. 169-173, describe two methods of treating woolens with bisulfite. Both give excellent crease-angle retention.

One method consists of treating the fabric in a 2% solution of $NaHSO_3$ containing 10% alcohol by volume for 15 minutes at 20 C. The goods are then thoroughly rinsed and dried at room temperature.

The treated fabrics can be pressed in a Hoffman press with steam, and creases formed in the press will be permanent. If the goods are well dampened before pressing, better crease-angle retention can be expected.

Garments already made up from untreated wool can be treated similarly immediately before pressing, at about half the concentration of $NaHSO_3$ used in the pretreating process.

Abrasion resistance of the fabrics in both cases is somewhat less, but tensile strength is in some cases slightly increased, in others only slightly reduced. The pretreating process seems to be the most workable and causes less over-all damage.

Transfer System Prints Cloth

An adaptation of the old-time decalcomania method of transferring a design from a carrier to a receiver is producing printed fabrics in Italy.

Suitable color designs are photographed by the three-color-and-black separation process. Engraved rollers are made for each color. The depth of engraving is keyed to paper-printing rather than fabric-printing, and is very shallow.

Carefully selected dyes at high concentration are used to "ink" the rollers. The multicolor prints are made on paper that is then superimposed on fabric, and both paper and fabric are put through a heated calender. Pressure along with heat transfers the dyes to the fabric, which is then processed according to the type of dyestuffs that were used.

Does Scouring Affect Tear Strength?

In a report to the Research Clinic, National Cotton Council, last month, E. James Stavrakas, Fabric Research Laboratories, Inc. suggested that the answer is "yes". He pointed out that whereas fabric geometry often plays a large part in determining the tear strength of resin-treated fabrics (see Cotton Research 1960: What's New, What's Good, this issue, p. 118), the scouring process used on the goods prior to finishing is also a factor in the over-all performance of the treated fabrics.

Stavrakas' reasoning is that thoroughly scoured cottons have been deprived of natural lubricants. As stress is placed on the del area (a crotch-like region formed where the fabric is being torn), fewer threads can slip into the del. Therefore the strain is distributed over fewer fibers. Tests have shown that scouring can cause a greater loss of tear strength than resin finishing.

How To Maintain Print-Paste Viscosity

Pigment printing pastes of the oil-in-water type often lose desired viscosity as color, catalysts, and auxiliary materials are added to the base emulsion.

To get around this trouble, chemists at Badische Anilin Und Soda Fabrik add 1 to 6% of a polyethylene oxide to the print paste. The additive should have a molecular weight of 2,000 to 10,000 —preferably in the range 2,500 to 8,000.

Dilution of systems that contain polyethylene oxides in this category produce an increase in viscosity rather than a decrease. With adequate viscosity, good blotch-printing pastes can be made that doctor off well and produce sharp prints on the finest patterns.

Government Research Pays Off for Wool

Progress in overcoming the tendency of wool to shrinkage was reported by Dr. Harold P. Lundgren, head of Western Utilization Research and Development Laboratories, Albany, Calif., at the recent Wool Textile Research Conference at Harrowgate, England.

Resin finishes based on epoxy-amino-polyamide mixtures have been tested extensively. One resin is the reaction product of epichlorhydrin and glycerine. The other is an epichlorhydrin-bisphenol product. Best curing agents for these resins are amino polyamides that help produce a more flexible resin.

Application of the resins is by conventional pad-tenter methods followed by curing and an afterwash with a synthetic detergent. The afterwash is important in breaking down the slight stiffness that is imparted by the resins.

Bleach and Stabilize Triacetate Fabrics

Knitted triacetate fabrics can be bleached and stabilized in two steps by a process developed by Celanese Corp. of America.

After a preliminary scour at 250 F. for 30 minutes in a soap and Calgon bath, the goods are treated for one hour at 260 F. in a liquor that contains 2.3 grams peracetic acid, 0.85 grams of NaOH, and 0.5 grams of Calgon per liter.

The fabric is held at constant dimensions during the treatments, which are applied in a closed vessel at 15 to 20 psi.

The excellent white, good stability, and resistance to creasing that are a result of this process is attributed to a substantial increase in fiber crystallinity caused by the sustained high temperature.

High SO_3 Content Improves Assistants

Old-line dyeing assistants like sulfonated oleic acid and sulfonated castor oil have been modernized by Swiss chemists to provide valuable leveling agents for dyeing nylon. The trick is to get a very high SO_3 content, and then remove the unreacted fatty acids by solvent extraction.

Sulfonated castor oil that has been sulfonated to 80% of theoretical capacity is one such product; sulfonated butyl ricinoleate is another. Unsaturated fatty acids that carry 16 to 20 carbon atoms are basic materials for the process.

The leveling agents have been found valuable in dyeing nylons with acid, chrome, and premetalized dyes that normally tend to produce barré effects on polyamide fibers.

Sandoz Ltd., who developed the assistants, notes that most dyes of these classes level out well at the boil with the high-SO_3 assistants, but that some of the acid milling and premetalized dyes work better at 110 to 120 C. As a second assistant, tannic acid has been found to be helpful in producing level dyeings. Organic acids such as acetic or formic acid, or ammonium sulfate are preferred to exhaust the dyeings.

Did You Know . . .

. . . that the apparent fading of some vat colors caused by optical brighteners can be overcome? Repeated launderings with detergents that contain anionic optical brighteners will have little effect on goods treated at the finishing plant with 1% of a cyanamide-formaldehyde compound developed by Courtaulds Ltd. and marketed as Fibrofix. The product doesn't work if the brighteners are of the nonionic or cationic type.

Goods that have faded as a result of the use of optical brighteners can be restored by treatment with the new compound. *. . . Turn the page*

What's New In Dyes and Chemicals

Disperse Dye for Truer Red

Latyl Red MG . . . provides true red shades of good fastness to sublimation on polyester fibers. Particularly suited to application by the Thermosol process, the dye has good fastness to light and wet processing, builds up well, and is not sensitive to alkaline-dyeing conditions. Light-fastness is considerably affected by traces of orthophenylphenol-type carriers, which are best removed by heat treatment of the dyed fabric. Shades increase in depth when goods dyed with this color are aftertreated with Zelan water repellent, go slightly yellower with Zeset MC. E. I. du Pont de Nemours & Co., Inc. **(Circle D-1 on Reader-Service Card.)**

Vat Dye for Cotton, Rayon

Ponsol Olive F Double Paste . . . is recommended for dyeing cotton and rayon to good unions that have excellent stability to Zelan-type water repellents.

The dye has good working properties, and lightfastness is in the 40- to 160-hr. range. Fastness to peroxide, drycleaning, hot pressing, and water-spotting is good. The color is not significantly affected by copper or iron. The shade change on soaping is 4W. E. I. du Pont de Nemours & Co., Inc. **(Circle D-2 on Reader-Service Card.)**

Carrier

Sharprint . . . gives increased color yield and increased sharpness and clarity to prints with disperse colors on polyester fibers. The product is supplied as a free-flowing white paste that can be added directly to print pastes by volume. The usual aftertreatments such as cottage steaming, aging, or curing may be used. There is no sacrifice of print sharpness in either wet or dry methods of color fixation. Excellent color yields can be obtained by steaming, aging, or curing at 300 F. for five minutes. Harshaw Chemical Co., Zinsser Div. **(Circle D-3 on Reader-Service Card.)**

Premetalized Dye

Lanamid Gray GBL . . . is a neutral dye that is characterized by good fastness to light and washing and better leveling qualities than Lanamid Gray G. The dye has good solubility and is nondusting. Allied Chemical Corp., National Aniline Div. **(Circle D-4 on Reader-Service Card.)**

Cross-Link Resins

Resyn 78-3143 and **Resyn 78-3147** . . . are specifically recommended for building up hand in wash-and-wear finishes and for binding nonwoven fabrics or pigment prints. The products are essentially vinyl copolymers that are highly reactive and thus combine with other finishes and binders.

Resyn 78-3143 is suggested as a builder for stiff finishes; Resyn 78-3147 is an extremely soft resin better suited to fully, drapy finishes and for binding pigment prints. National Starch & Chemical Corp. **(Circle D-5 on Reader-Service Card.)**

New Softener

Softwear C . . . is a cationic softener that produces finishes durable to laundering and drycleaning. Application by exhaustion methods or by padding is possible, and the softener works well with thermoplastic or thermosetting resins. Resistance to discoloration at curing temperatures is good. The product has moderate bacteriostatic properties. Hamilton Chemical Corp. **(Circle D-6 on Reader-Service Card.)**

Acid Dye

Brilliant Alizarine Light Blue 3 FR . . . is characterized by brilliance of shade and is recommended as a self color for baby blues on yarn or piece goods where the needed brightness cannot be gotten with other dyes. The color has very good lightfastness when it is dyed on nylon or silk. Sandoz, Inc. **(Circle D-7 on Reader-Service Card.)**

Pigment Binder

Morpatex 50 . . . is especially designed to bind metallic pigments on cotton, glass-fiber, and man-made-fiber fabrics.

Supplied as a water-phase emulsion, the binder is based on thermoplastic and elastomeric polymers compounded to meet textile requirements. Prints fixed with the product will resist drycleaning and laundering by AATCC tests 86 and 36.

Other characteristics include good luster and resistance to discoloration by light or aging. The binder can be used for any type of printing and works well alongside practically all classes of dyestuffs and pigments. Morningstar-Paisley, Inc. **(Circle D-8 on Reader-Service Card.)**

Bleach-Bath Stabilizers

Chlorite Stabilizer BASF . . . combines control of chlorine dioxide vapors with good wetting and cleansing action in chlorite bleach baths. The product helps to reduce corrosion of equipment that is used in chlorite bleaching, particularly when the liquor is of low chlorite content.

Perstabilizer BASF and **Perstabilizer BASF Powder** . . . are two forms of a product that is useful in stabilizing the active oxygen in alkaline bleaching baths based on peroxides, sodium perborate, or sodium percarbonate.

Besides controlling too-rapid oxygen liberation, the product acts as an inhibitor of the action of metallic contaminants that often produce local damage to fabrics by spontaneous decomposition of the oxidizing chemicals. The stabilizers do not deposit on equipment or precipitate out during the processing period. Putnam Chemical Co. **(Circle D-9 on Reader-Service Card.)**

Water Repellent

Persistol Extra . . . produces excellent water-repellent effects alone or in conjunction with resin finishes.

The water repellent is based on a wax emulsion and zirconium, but does not contain any emulsifiers.

Application is by normal padding methods followed by drying at 212 to 245 F. for best results. Hand and shade of fabrics treated with the product are not affected. Woolen goods may be treated by the exhaustion method in the dye beck. Putnam Chemical Co. **(Circle D-10 on Reader-Service Card.)**

What's in back of today's better-quality carpets?

New DYLEX® K-40 latex allows better carpet backings at less cost to the manufacturer. It needs no accelerators, no vulcanizing agents of any kind. You can use simpler, less expensive mixing equipment. DYLEX K-40 is easy to mix—merely add filler and a small amount of dispersant. A wider range of dyestuffs can be used with new DYLEX K-40. There's no danger of a reaction with certain dyes.

Carpet backings made with DYLEX K-40 give you "soft hand" - - - and they stay flexible!

See for yourself. Send for a carpet sample backed with DYLEX K-40. Check its softness. Note its flexibility. Test its aging qualities. You'll see why you should use new DYLEX K-40 in rug backing compounds! Write Koppers Company, Inc., Plastics Division, TW-70, Pittsburgh 19, Pennsylvania. Offices in Principal Cities • In Canada: Dominion Anilines and Chemicals Ltd., Toronto, Ontario.

KOPPERS PLASTICS

CIRCLE 77 ON READER SERVICE CARD

SKETCHING—sketchmaker adds final touches to design outlines that have been engraved in acid-resisting paint. The fine engraving will be deepened by an acid etch. After another check the plate will be ready to mount.

TRACING—the pantograph operator, working with one color at a time, guides the needle along the etched lines in the zinc plate. The motion is transferred by the pantograph linkage to diamond points that scratch the acid-resisting varnish on the copper roll.

ETCHING—this roll is being etched in an acid solution that will deepen the fine engraving made by the diamond points of the pantograph. Time, temperature, and type of acid determine the final effect of the etching progress.

What You Should Know About Roller Printing — Part I

How To Select A Design And Engrave It

By L. H. FERGUSON, Supt. of Finishing, Wade Mfg. Co., Wadesboro, N. C.

Everybody (including you) gains by taking a fresh look at basics from time to time. Here's the start of a three-part refresher on roller printing. It will update you on what's tried and true—tell you what's new, too. Part 2 (next month): Printing Machines and How They Run. Part 3 (still later): How the Color Shop Functions.

GOOD DESIGNS for roller printing don't just materialize out of thin air. It takes a skillful combination of art (on the artist's part) and of technical know-how (on the converter's part) to bring off a happy combination of good looks and high production.

But just a knowledge of roller-printing mechanics isn't enough. As a converter you should also have a firm grasp of the other aspects of high-quality printing. And no aspect is more basic than the art and design work.

Most patterns are the brainchildren of commercial artists who specialize in such work. Most of the studios that cater to converters are in New York, where the bulk of the designers and converters are.

Just as you have to give thought to the design problems involved in roller printing, you will do well to inform the artist-designer of the following things before he begins to work:

• The type of goods that his design will work with. Is it to be men's shirts, women's skirts, nightwear,

undergarments, curtains, draperies, or mattress covers?

• The end use of the goods and the section of the country where the printed cloth will be sold. Both are important influences on selection of color and pattern. For example, browns and tans don't go well along the Mexican border. Children's wear patterns should be delicate but not too bold in color. But, on the other hand, Latin Americans like lavish color.

• The type of cloth that will be used and the limits of detail work that you can accept. Very fine dots, for instance, can be satisfactorily printed on a closely woven cloth, but they print with indifferent success on low-count cloth.

• The risks of fine detail, which usually causes poor washfastness of colors on flannels and corduroys because the color doesn't get into the fiber. Instead, it lays up in the nap (in flannel) or in the wales (on corduroys).

• The possibility of creating a warp or fillingwise streak through the arrangement of figures or motifs that he uses to make up his pattern. Often these streaks are hard to find on the design. But they stick out like a sore thumb when the pattern is printed and the cloth rolls out the printing machine.

That's a quick summary of some of the things that you can stress to your designer. Now how about your half of the job? What are the things for you, as a converter, to keep in mind?

How to Spot Errors

What's to be done about such things as an unseen streak through a print? Some mills have devised this system: Before the design goes to the engraver, the mill technical man has the artwork projected on a screen (or have an enlargement made). That way, defects show up easily, and there's no guesswork.

The design should have a warpwise and a fillingwise repeat. The warp repeat has to divide into the circumference of the print roll so that the pattern will join and be continuous around the print roll.

In the filling repeat, the designer must allow for the width of cloth to be printed so that a certain number of repeats will appear on the width of the printed cloth. (Most designers do try to stay away from odd repeats that don't fit standard-size print rollers.)

Another point to bear in mind is this. Some converters and garment manufacturers have their pattern copyrighted (TEXTILE WORLD, June 1960, p. 38). Both you and the designer have a moral responsibility to steer clear of duplicating non-copyrighted patterns. And you have a legal responsibility to stay away from copyrighted designs. Of course, that's not to say that designers don't use other patterns as a guide (or perhaps as an inspiration) in developing new patterns. Most designers do get ideas from others.

The designer also gets ideas from woven patterns. He often will try to get a similar effect in his print design. Designs may also simulate knitted material, corduroy wales, clouds, waves, and other natural objects.

How the Printer Helps

The designer goes over the pattern with the printer and they agree on certain changes that will make the pattern more printable without materially altering the desired effect. The printer may suggest the elimination of a certain detail that he knows from experience will not print satisfactorily. He may object to long spans in lines across the cloth, because he knows these will make his doctor blade dip into the lines and will lower the production on his machine and shorten the life of the engraving.

The printer may suggest certain allowances between colors or the elimination of whites between colors. This way he can increase production in printing the pattern by easing the registration problem. The printer can control the registration on a jam-up tight fit much more easily than he can keep a white between figures divided properly.

The printer and designer should also discuss the proposed color combinations, for they will have a great bearing on the way the pattern will be engraved, as well as the order in which the rollers will be placed in the printing machine. Printer and designer should work out color combinations that will avoid reversing rollers or changing roller positions from one color combination to the next, which can cost a lot of production. It is sometimes necessary to reverse rollers to keep colors clean, or uncontaminated, and to obtain desired effects.

Often the printer can offer the designer suggestions that will lower the cost of engraving without doing damage to the effect. Certain details that can be obtained only with photographic engraving may be changed so that they can be engraved by pantograph and thus reduce the engraving cost. Often fine stipple work, which causes inferior washfastness because colors don't penetrate into the cloth, can be replaced with small pantograph dots, or seeds, which give more color penetration and do not materially affect the desired effect.

Right-Way Engraving

Once artist and printer agree on the basic washability of the design, they choose the engraving method they will use. They'll base their choice on several factors:

• **Types of colors.** Some colors migrate or blush more than others. As an example, a rapidogen-type color will print with the same engraving a colored figure or line slightly larger than will an oil-in-water pigment color. And a water-in-oil pigment color will likewise print a figure or a line larger than will an oil-in-water pigment color.

• **Type of thickener.** This is used to give the colors body so they will stay in the engraving and print properly. It will materially affect the amount of color put onto cloth by a given engraving. The engraver should be informed of the type of colors to be used so that he can make correct allowances on his engravings.

• **Type of cloth the pattern will be printed on.** This will affect the depth of the engraving. A heavy cloth requires a deeper engraving than a light cloth. The engraver and the printer should discuss the type of engraving to be used—pantograph, mill, or photographic.

• **Order, or pitch, in which the rollers will be placed in the machine.** This will guide the engraver in making the correct allowances for flushing or migration of color from the edge of the engraving.

• **Relation of various colors.** This is whether they fit or fall on each

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other. This will determine to some extent how deep the engraving should be.

• **Printing technique.** A wash blanket and a back gray will have a bearing on the conversion of a design to a pattern.

The printer should also tell the engraver if the engraving is to have a framing allowance or a shrinkage allowance, or if the engraving is to be slashed on the rollers. If the goods have a framing allowance, the printer will print the cloth narrower than the required finished width. The engraver then will engrave the figures narrower than shown on the design so that the framing operation after printing will cause them to assume correct size and shape.

When a shrinkage allowance is ordered, the engraver elongates the figures so they will be the correct size after compressive shrinking. When the engraver is ordered to slash the engraving, he puts the engraving on the roller at a slight diagonal so that a figure on one end of the roller will not be in line with the corresponding figure on the other end of the roller. Slashing is usually used when the pattern has lines running fillingwise on the cloth

This slash permits the doctor blade, which removes color from the unengraved portion of the roller, to cross these lines at an angle and prevents the doctor blade from dipping into the line and knocking out color. This dipping action not only knocks color out of line to cause faulty printing, but also causes excessive wear on the engraving.

How Engraving Is Done

If the design lends itself to pantograph engraving, the engraver transfers the pattern to a plate (usually made of zinc) by reflecting the design from a camera onto the plate. In this procedure the sketch maker traces the figures on the plate from the reflection. The design may also be transferred to the plate by the photographic method. The sketch maker paints the plate in colors similar to the design because each color has to be engraved on a separate roller.

The outlines of the figures are then etched into the plate so that the tracing needle of the pantograph machine can follow them. The figures on the plates are usually made several times as large as they appear on the design and are reduced back to correct size on the roller by adjustments on the pantograph machine. The purpose of this procedure is to simplify the tracing of the pattern by the pantograph operator and to minimize mistakes, or slips, made by the operator with the tracing needle.

The copper printing rollers that are used for the pattern are turned and polished to a uniform size, with a tolerance of 1/1000 inch. They are coated with an acid-resistant varnish before engraving. Uniformity of roller size is important because all the rollers usually are geared to the main star gear of the printing machine. Any variations in circumference would prevent patterns from being in fit.

Occasionally an over-all stipple or masking pattern may be printed from a roller that is driven merely by contact against the goods, but in such cases there are no fitting problems.

The etched zinc plate is placed securely on the pantograph table, and a varnished copper roller is mounted at the back of the machine. The operator traces the outlines of one color by moving the tracing needle along the etched groove in the zinc plate. At the same time, diamond points scratch through the varnish of the copper roller in a reduced-size version of the tracing needle's movements All repeats across the roller are made in this one "round," as it is called, by the necessary number of diamond points.

The number of rounds is determined by the size of the warpwise repeats, which must divide equally into the circumference of the roller to preserve pattern continuity. The operator presses a pedal to cause the diamond points to scratch the varnished rolls. He releases the pedal to stop this action.

Grounds for Large Areas

All engraving, except fine lines, must have grounds in it. The grounds are diagonal lines placed in the figures on the pantograph machine, or the ruling lathe in the case of blotches or very large figures. The purpose of these grounds—the tops of which are usually up to the surface of the unengraved portion of the roller—is to hold the color in the engraving until it is deposited on the cloth and to support the doctor blade as it crosses the engraved figure.

Different-size figures and different types of cloth require a different number of ground lines per square inch. On some large figures and blotches the engraver may use 25 to 35 ground lines per square inch. In smaller figures or blotches and large figures for special types of cloth he may use as high as 100 lines or more.

When the grounds are put in on a ruling lathe, only the outlines of the figures are done on the pantograph machine. Then the roller is placed in a ruling lathe, which is similar to lathes in a machine shop. A mill, which is a tool on which the ground lines have been raised, is brought to bear on the roller as it revolves in the lathe. The mill, which is held in contact with the roller by a weight, travels from one end of the roller to the other.

This mill cuts the ground lines through the varnish coating of the roller. The roller is then placed on a bench and an operator uses acid-resisting varnish to paint out the portions of the roller that are not to be etched, or engraved. The purpose of using the ruling lathe is to eliminate joining marks in blotches and large figures. If grounds are done on the pantograph machine, the ground lines will not join perfectly from round to round and will cause a heavy or light mark in the printing where they join.

How Etching Works

After all the design and ground lines are scratched through its varnished surface, the operator examines the print roller for misses or slips. The misses are put in. Any slips are painted out with the same type of varnish with which the roll is coated. The roller then goes in an acid bath and is slowly revolved, either manually or mechanically, until etching progresses to the proper point. This is usually determined when the engraver sees the tops of the ground lines begin to etch or break off.

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a new

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Nitric acid is the usual etching chemical. Ferrous sulfate also help do the job.

On some types of engraving the engraver may etch the grounds below the unengraved surface of the roller. This method is used on engravings to be used in metallic printing, in which the ground lines are etched down to the bottom of the figures. Some etching is now done by an electrolytic method that pulls copper away from the exposed parts of the roller by an electric current. A salt bath acts as the conductor.

After either method of etching, the engraver washes the roller with tap water and removes the varnish in a bath of a petroleum solvent (such as kerosene).

The roller then goes to the bench man, who is a specialist in the repair of print rollers. He touches up minor flaws with hand tools. This operator uses copper wire to plug up any holes that he detects in the unengraved portions of the roller surface. Holes sometimes occur in the casting of the copper print roller.

How to Finish Rollers

The roller is now ready for the finishing operation—polishing and chromium plating. The roller is taken from the bench and placed in a lathe equipped with a pan of water, in which the roller dips as it turns. The operator polishes the roller with a special type of polishing stone, called Water of Ayre stone. He then dries the roller, and it is ready to go in the chromium-plating tank.

Chromium plating of copper print rollers got its start about 1930. Chromium plating makes the unengraved portion of the print roller, as well as the tops of the ground lines, harder than the steel doctor blade that removes color from the unengraved portion of the roller before the roller contacts the cloth to be printed. The chromium plate prevents the scratching of the unengraved part of the roller by foreign particles that may hang under the edge of the doctor blade. It also prevents undue wear of the ground lines in the engraved figures by the doctor blade.

Plating has been a great help to the roller printer. But is not completely effective because the chromium plate, although harder than the doctor blade, is a very thin film and can be broken by foreign particles hanging under the doctor blade. It will also wear off portions of the roller if the printing color is not well lubricated.

The polished and dried copper roll now goes to the plating bath without hand contact, to avoid perspiration spots that would resist the plating process.

The plating bath is made up with chromic acid and is heated slightly above room temperature. Electric current is passed from a series of anodes placed around the print roller, which is the cathode, and the chromium from the plating bath is deposited on the print roller.

A very thin film deposits evenly over the entire surface of the roller and follows all irregularities. Therefore, the depth of engraving remains in the same relation to the original surface as it was before plating.

For best results one ampere of current is used for each square inch of roller surface. The roller is left in the bath 30 to 50 minutes. The longer time usually gives best results because the plating is neither too hard nor too soft. Thirty minutes' plating time usually produces a soft plate, which gives poor service because foreign particles that catch under the doctor blade will scratch it easily. Also this soft plate will sometimes actually move into—and fill up—the engraving and cause inferior printing.

How a Mill Is Made

Another type of engraving is known as mill engraving. To begin a mill engraving a skilled workman, known as a die-cutter, uses hand tools to cut a repeat of the design into a cylinder of steel. The die-cutter usually does his work under a strong magnifying glass. When completed, the steel cylinder (called a die) is placed in a machine. Here it is brought into contact, under tremendous pressure, with a cylinder of soft iron, called the mill. The pressure of the machine causes the pattern to be raised on the mill. The mill is then examined for flaws, corrected if necessary, and finally case-hardened.

The next step is to place the roller in the milling machine, which resembles a machine-shop lathe. The mill is brought into contact with the roller and held there by pressure. The roller revolves until the engraving has been cut into the roller to the correct depth. The mill then shifts to the next side repeat of the pattern, and the process continues across the face of the roller.

On some patterns the mill may be spiraled on the roller. By this method the roller is adjusted in the milling machine at a slight angle, which permits the mill to travel from one end of the roller to the other without losing contact with the roller. No etching is used in mill engraving, so the roller is not varnished and is ready for polishing and chromium plating when it comes out of the milling machine. Not as much mill engraving is done now as in the past because of the time that is required and because of modern improvements in photographic engraving.

Now It's Photoengraving

A third type of print roller engraving is the photographic process. In this method, a film made of the pattern is wrapped around the roller, which has been prepared with a special coating, and the design is photographed on the roller. After the correct exposure time, the film is removed from the roller and the roller is etched in much the same way as the etching process that follows pantographing. The etched roller is then polished and plated in the usual way.

The details, shadings, and blending of colors that can be produced by the photographic process cannot be approached by any other engraving technique.

By the photographic process, good duplicates of woven patterns and wooly effects are produced, which formerly were done satisfactorily only by the mill-engraving process. The possible effects are almost unlimited.

Another engraving method of limited usage is sponge engraving. In this technique, results similar to those obtained by photographic engraving are produced by a special method of etching the plate used on the pantograph machine.

Other engraving methods, such as air brush, are of limited importance.

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Du Pont's New Rapid Bleach Process Cuts Bleaching Costs... Improves Dyeing Quality

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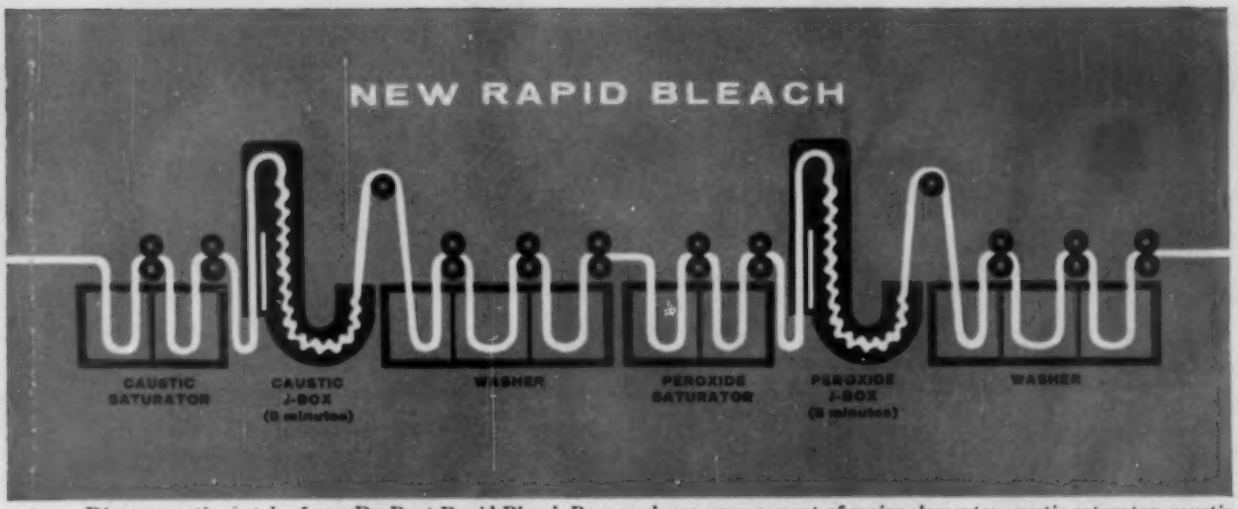

Diagrammatic sketch of new Du Pont Rapid Bleach Process shows arrangement of major elements: caustic saturator, caustic J-box, washer, peroxide saturator, peroxide J-box and final washer. Operation saves time, cuts operating costs. It can be used for medium-weight cotton fabrics and is especially suitable for hard-to-handle heavyweight fabrics that are susceptible to bruising.

Production-scale operations prove the superiority of the Du Pont Rapid Bleach Process over conventional methods for preparing heavy cotton fabrics for dyeing and finishing . . . at a lower cost.

The new Du Pont Process (shown above) prepares fabrics for finishing with high absorbency and exceptionally good dye receptivity. You obtain high color values and much greater clarity from the dye colors used. And you do it faster and easier.

Du Pont Rapid Bleach is a continuous process . . . specifically designed for medium to heavyweight fabrics. It's unique, simple and fast. Has caustic pre-treatment in the first J-box. The new two-stage process reduces cloth storage time to as little as 8 minutes in each J-box. Makes substantial savings possible over batch methods.

This new method introduces an open-width, continuous process designed for the preparation of sensitive fabrics (such as twills, drills, poplins, etc.) for dyeing. It reduces seconds and rejects due to bruises, rub marks and creases and can be readily adapted to any continuous, or semi-continuous, open-width system.

If you'd like more information on new Rapid Bleach, call your Du Pont Representative. He's a specialist in textile bleaching and will be glad to show you how this new process may profitably fit into your mill.

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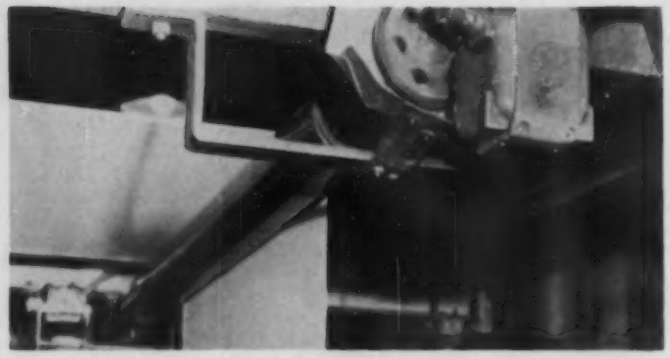


TWO TOOLS—recorder and totalizer—show machine performance. Totalizer (on the right in the photo at left) totals running time for bleaching and dyeing ranges, mercerizer, tenters, shrinking machine. Small generator (above) is turned by tenter-frame guide roll, produces current that actuates stylus on recorder (on the left in the photo at left).

CHEMICAL TREATMENT & FINISHING

Fast Check on Downtime

This brand-new system helps Standard Bleachery & Printing (and will help you) keep tabs on principal production machines, find out what downtime costs really are.

A NEW MANAGEMENT TOOL that has excellent cost-control potential is now working at Standard Bleachery & Printing Co., Carlton Hill, N. J.

Essentially a bar-chart recorder, the unit was developed by Gorell & Gorell, Inc. (Westwood, N. J.) from an instrument orginally designed to record cardiac performance in hospitals.

Standard's installation is the first in a cotton bleachery. And management has only begun to realize the possible benefits from this automatic watchdog of the principal processing machines.

The recorder can check the production effort of 40 different machines. At present it's hooked up to 12 of the most important ranges. Standard will tie in other smaller machines in the near future.

The record is kept on a chart mounted on a revolving cylinder. The chart is divided into 40 columns, each of which is allocated to one production unit.

The chart rotates at 1 rpm. As each column moves into position, a steel stylus strikes the chart and prints a short bar, if the machine is running.

The stylus moves upward on a supporting column at a rate that takes it from the bottom of the chart to the top in 24 hours.

A quick check of approximate running time or downtime can be made by looking at the chart, which is marked off in 20-min. intervals by dotted line and 1-hr. intervals by solid lines. The exact running time of each machine is totaled by the individual electric clocks mounted in the auxiliary unit.

Checking Downtime

Mounted in the routing office, the machine and its auxiliary totalizer give a constant picture of primary machine production.

The production manager, who knows what lots are going through which processes at any given time, has constant knowledge of the status of a lot. If a machine is down, he can check and find out why, how long the delay will be, and what caused it.

This feature is of great value to the production manager who must meet delivery promises.

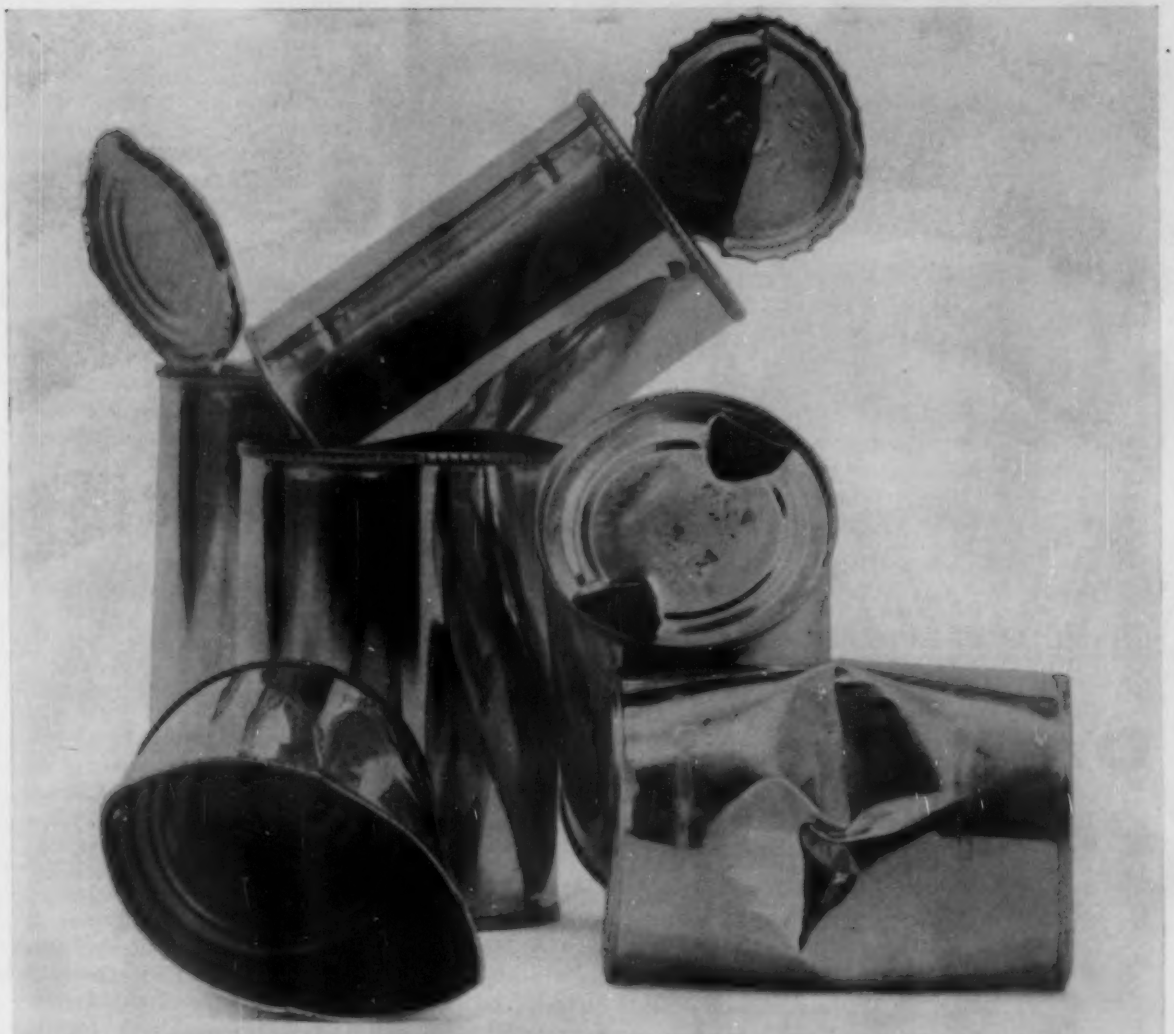
From a costing standpoint, the records produced by the machines can be used in various ways. Comparisons between running time and total time required to get a lot through a process give a more accurate picture of actual costs than dividing the potential production rate into the yardage of a lot.

As data accumulate and all the various reasons for machine stoppage have a chance to occur and average out, a cost-per-yard figure for any process and any fabric will emerge. This sound costing method makes closer figuring possible in bidding for work.

Spurring Output

The effect of automatic and accurate determination of machine performance has real psychological value. Both operators and supervisors in the plant tend to be more conscious of lost time when each day the written record of the previous day's performance is delivered to their respective departments.

But Standard's key personnel don't look on the new production-control system as a punitive measure. They recognize it as a useful tool that will help maintain their plant in a competitive position.



THE TIN CANS THAT TURNED INTO GOLD

(Another Diamond Alkali Success Story about Caustic Soda)

A Scrap Dealer was having trouble deciding whether or not to go into the steel detinning business. He wasn't even sure a practical reclaiming method had been perfected.

He called the Diamond technical man and gave him the problem. The problem was referred to the Diamond laboratories.

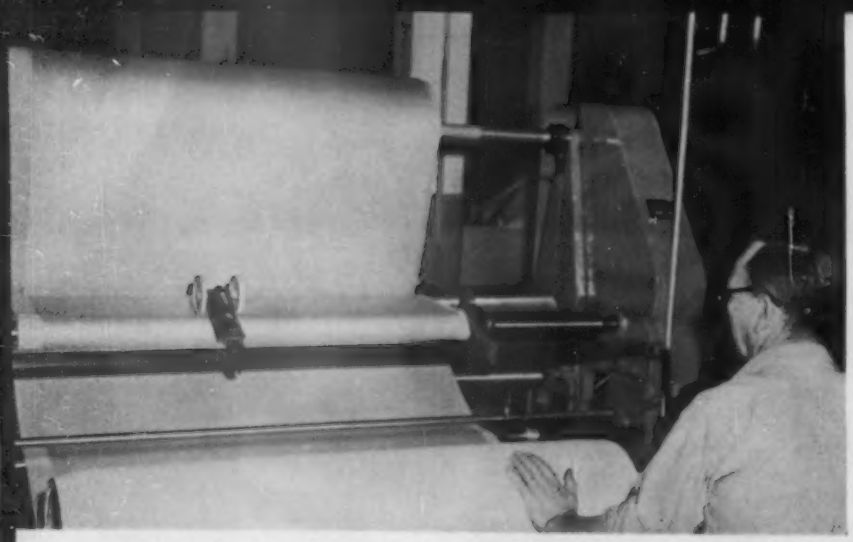
Not only was this man given a formula for detinning with caustic soda, but also a detailed flow chart of the process and tips on how best to market the reclaimed tin.

If *you* use caustic soda, get to know the Diamond technical man. He saves customers money on shipping and handling problems, helps with their process problems. What he can't handle himself, he'll refer to the Diamond Research Center.

There is no finer caustic soda than Diamond's. There is no better service than Diamond's. No matter where your plant is located, you can get fast, economical delivery from one of Diamond's four strategically located producing plants. By truckloads, carloads or bargeloads.

Call any Diamond Sales Office: Chicago, Cincinnati, Cleveland, Houston, Memphis, New York, Philadelphia, Pittsburgh, St. Louis. DIAMOND ALKALI COMPANY, 300 Union Commerce Building, Cleveland 14, Ohio.

Diamond Chemicals



FAST PREPARATION of laminate requires only trimming of one selvage on this new machine. Once trimmed, fabric is ready to go to the cutter. Lamination works well on wide variety of woven and knitted fabrics.

CHEMICAL TREATMENT & FINISHING

Dry-Laminating Foam to Fabric

Here's how Reeves Brothers turns the tide at its Garfield (N. J.) plant. And here's the pay-off: outerwear fabrics that are warm, lightweight, and resistant to mildew and age.

THERE'S A NEW OPERATION just getting under way in Garfield, N. J. It promises far-reaching consequences in the outerwear field. What's happening? Reeves Brothers, Inc., is dry-laminating polyurethane foam on a wide range of woven and knitted fabrics.

The process was originally developed by Curtiss-Wright Corp. That company called its system Curon interlining. Now Reeves has taken over both the process and the machinery under a licensing arrangement with Curtiss-Wright, which supplies the foam for Reeves' operation.

Polyurethane foams have many desirable characteristics that make them excellent for textile applications. They are high on insulation value—as good as cork or rockwool. They are light in weight. They are vapor-permeable. And they are also resistant to laundering, dry cleaning, mildewing, and ageing. Add all these features up, and you see why the product is a natural for making warm outerwear.

How Reeves Laminates

Goods received at the plant are already dyed and finished. They are batched up into lots for laminating to the foam.

Reeves sets the laminating machine to carry a roll of fabric and a roll of polyurethane foam, and to batch up the finished goods.

The polyurethane foam is led over a water-cooled roll and is struck by a gas flame that softens the outer surface of the foam. After a travel of 6 to 8 inches under the flame, the foam meets the fabric, which feeds in from the opposite direction. Foam and fabric then pass through a nip that exerts enough pressure to weld the hot, tacky foam to the fabric.

Control Is the Secret

When you consider that most of the polyurethane foams that are used are $\frac{1}{16}$ or $\frac{3}{32}$ inch thick, and that they are subjected to a high-Btu. gas flame, it's obvious that exposure time and the area affected by flame have to be pretty closely controlled to avoid disaster and at the same time get a strong foam-fabric bond.

These details have been carefully worked out in the Curtiss-Wright machine. Production is 25 to 40 yards per minute.

What's the Market?

John Becher, manager of the Garfield plant, is enthusiastic about the possibilities of the Curon laminations, especially for knitted fabrics. Last year's production of over a million yards (while Reeves was working through Curtiss-Wright) should be easily exceeded under the new production and sales set-up, Becher says.

Application of the foam opens up many new outlets for knitted fabrics. Why? Two reasons: First, the stabilizing effect of the foam removes traditional objections to sagging or shrinking. Second, the insulative value of the foam makes a 6-oz. wool jersey fabric as cozy as an 18-oz. melton—without the weight and bulk.

A typical lamination of $\frac{3}{32}$-in. foam adds about 85¢ per yard to the fabric cost. Quilted Dacron batts that are commonly used as interliners for outerwear will run 15 to 20% less per square yard of fabric. Reworked wool or cotton batts may cost half as much.

Curon's advantages seem to lie in its high warmth-weight ratio, good drape and low bulk, plus resistance to practically any outside influence that might conceivably be encountered by an outerwear fabric.

The wide range of properties now available in Eastman's Epolene series provides greater flexibility in formulating polyethylene emulsions for softening "wash and wear" cottons and synthetics, and for textile lubricants and sizes.

Permanent, low in color, non-chlorine retentive and easy to prepare, emulsions based on Epolene polyethylene give you a practical and economical method for improving the hand, abrasion resistance and tear resistance of "wash and wear" treated fabrics.

With Epolene, you can prepare any kind of emulsion system, cationic, anionic or non-ionic, with solids contents of up to 40%.

Choose from three different low-molecular-weight resins to obtain the right emulsion properties and finishing characteristics for your equipment and service.

Epolene E is the highest-molecular-weight resin of the three. It produces stable, low-color emulsion systems of superior quality for use in softening cottons or synthetics, or as a lubricant to reduce needle-cutting and increase sewability. Like other Epolene resins, it needs no curing, lasts through repeated launderings and resists dirt pick-up and redeposition.

Epolene LVE, a new resin type, has a lower melt viscosity than has Epolene E, thus offering somewhat better handling characteristics. Epolene LVE is softer than other resins in the series. The stability of its emulsions in the presence of resin catalysts is outstanding, especially at the low end of the pH scale, as indicated by its relatively high HLB factor.

Epolene HDE is the first high-density, emulsifiable low-molecular-weight polyethylene on the market. Because it is much harder, it improves significantly the abrasion resistance and tear resistance in cotton and cotton blends. Its stability and permanence are excellent. It, too, offers easier handling characteristics during emulsion preparation because of its low melt viscosity.

If you are formulating polyethylene softeners and would like to produce stable, economical emulsion systems of superior all-'round characteristics, look to Epolene from Eastman. Let us introduce you, also, to new time-saving and cost-cutting emulsifying techniques developed at our textile laboratories. For more information on the formulating and performance advantages of these superior polyethylene resins or for specific formulating assistance, write your nearest Eastman office. We invite your inquiry.

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tennessee; Atlanta; Chicago; Cincinnati; Cleveland; Detroit; Framingham, Massachusetts; Greensboro, North Carolina; Houston; New York; Philadelphia; St. Louis. **West Coast: Wilson and Geo. Meyer & Company,** San Francisco; Los Angeles; Portland; Salt Lake City; Seattle.

Eastman now offers textile finishers 3 basic types of polyethylene

New EPOLENE resins enable textile chemists to formulate broader range of softeners

Property	Epolene E	Epolene LVE	Epolene HDE
Molecular Weight	2500	1500	1500
Density	0.938	0.939	0.956
Ring and Ball Softening Point, °C. (ASTM D-36-26)	104-108	104-105	110-111
Penetration Hardness (100 g./5 sec./77°F., tenths of mm.)	2	5	1
Color (liquid), Gardner scale, max.	2	2	2
Brookfield Viscosity (cps. @ 120°C.)	1500	400	455

Epolene

EASTMAN low-molecular-weight polyethylene resins

CIRCLE 89 ON READER SERVICE CARD

Now.... a new PERKINS 3-ROLL CALENDER with many advanced features

High production and better finishing combine with easier operation and lowest maintenance cost to make this all-new Perkins 3-roll calender the "Calender of Tomorrow." Designed and built to give years of trouble-free operation, its many advanced features include:

- **Quick removal of intermediate roll without removing cheek pieces**
- **Independent pressure control of both sides of calender**
- **New let-off and wind-up**
- **Heavy welded steel frames and bearing housings**
- **All rolls run in tapered bore bearings for quick removal**

THE WORLD'S LARGEST MANUFACTURERS OF CALENDER ROLLS

B. F. PERKINS & SON, INC.

HOLYOKE • MASSACHUSETTS

MIRACLE SIZE FOR MIRACLE BLENDS

Kofilm

ACETYLATED STARCH DERIVATIVE

KOFILM gets new blends off to a fast start. Eliminates start-up adjustments and shutdowns. Permits high-speed weaving of *any* blend of fibers—from the newest to the oldest.

KOFILM is a noncongealing, chemically-treated starch warp size. It forms exceptional films. High in strength. Extremely flexible. Very tough. Insures top efficiency the way no other starch can.

KOFILM is quick and simple to use. A National Textile Specialist will be glad to demonstrate its advantages. Write or call your nearest National office to make arrangements.

National STARCHES

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CIRCLE 91 ON READER SERVICE CARD 91

A JACQUES WOLF Chemical for every processing need!

For any stage of textile processing, Jacques Wolf & Co. has a complete line of chemicals and specialties. Whatever your particular problem, we shall welcome the opportunity of submitting samples custom-formulated to meet your needs. Write for our catalog.

HYDROSULFITES

HYDROSULFITE AWC—($NaHSO_2CH_2O.2H_2O$)
For stripping and discharge printing.

HYDROSULFITE OF SODA—(Conc.) ($Na_2S_2O_4$)
For reduction of vat colors. Non-Dusting.

HYDROSULFITE B Z—($Zn(OH)HSO_2CH_2O$)
For stripping wool stock, shoddy, rags.

HYDROZIN*—($Zn(HSO_2CH_2O)_2$)
For stripping acetate dyes and discharge printing on acetate dyed grounds.

HYDROSULFITE QD—For rapid dissolving in continuous vat dyeing.

DE-SIZING

AMPROZYME*—For liquefaction of starches and proteins in de-sizing textiles.

DIASTAZYME*—Used as an economical de-sizing agent for starch-sized textiles.

SCOURING

ORATOL L-48*—A synthetic detergent with excellent penetrating and emulsifying properties.

BENSAPOL—A liquid detergent derived from Monopole Oil particularly useful for scouring wool.

LOUPOLE W-950—A penetrating detergent for use in scouring or boiling off.

PARNOL—Sodium Dodecyl Benzene Sulphonate.

SELLOGEN GEL — A synthetic detergent used also in dyeing and as a wetting agent for all natural and synthetic fibre.

DETERGENT W-1750A—Has anionic and non-ionic properties; excellent for scouring nylon and dacron to remove throwster sizings; penetrates and lifts graphite streaks.

DYEING

WETSIT CONC.*—A synthetic aromatic compound for wetting out in both the dyeing and scouring operations.

WETSIT NI—100% non-ionic wetting agent.

MONOPOLE OIL*—A highly concentrated, double sulphonated castor oil for a wide range of operations.

APASOL*—Particularly effective in the dispersion of acetate printing colors. A sulphonated ester with a high combined SO_3.

LOMAR PW*—Dispersing agent for pad dyed vat colors; also retardant in the dyebath.

SULPHONATED OILS—Castor, Cod, Sperm, Olive, Neatsfoot, Pine, Red, Teaseed, etc.

FINISHING

ACETATE OF ALUMINA—Water-clear solution, sulphate and iron free; used for waterproofing.

ALUMINUM FORMATE — For waterproofing; clear, water-white, stable; sulphate, chloride and iron free.

LUPOSEC—Stable emulsion of mineral waxes with aluminum acetate. For one bath method of waterproofing.

STATLESS—Paste for reducing static on all fibres.

CREAM SOFTENERS—In different strengths and varied degrees of alkalinity for a soft full hand to all types of fabrics.

LUPOMIN*—A series of cationic nitrogen compounds used for softening and finishing textiles.

CHAFE REMOVER W-545-T—A finishing oil for textiles, particularly silk fabrics, to remove chafe marks.

LUXAPOLE W-1054-B—A superior, sulphonated oil for finishing all fine fabrics.

OIL S-261C—A clear, amber oil used as a penetrator and softener for cotton cloth; aids in uniform shrinkage.

SOLUBLE WAX JB—A dispersed vegetable wax for full body and high lustre to cotton goods.

WEIGHTER FINISH M—For heavier body and better hand for all fabrics.

PRINTING

SUPERCLEAR*—Prepared from natural gums as a thickener for printing all types of textiles.

SUPERGUM—A cold-water soluble gum.

PIGMENT WHITES—Dispersed suspension of white pigments with plasticizers for use on light grounds, or white discharge on dyed ground shades.

ACETATE OF CHROME—As a mordant in dyeing and printing mordant colors. Also for dyeing mineral shades.

TRAGACANTH—Gum solutions in various concentrations for extra clear, sharp prints when used with acid, direct or insoluble Azo dyestuffs.

OTHER SPECIALTIES

Mordants	Gums—Arabic, Karaya and Tragacanth
Defoamers	Fiber Lubricants
Sizes	Thickeners
Delustres	Wool Oils
Penetrants	Sulfonated Oils (various bases)
Weighting Finishes	

JACQUES WOLF & CO.
Chemicals NEWARK, N.J.
A subsidiary of Napco Chemical Company

Cottons to Crinolines . . .

CELANESE PVAc EMULSIONS ADD TO FABRIC QUALITY

Celanese polyvinyl acetate emulsions can be formulated to give just the handle and finish you need. Woven fabrics varying in weight from percale to denim or heavy twill can be made more durable . . . tensile strength and wrinkle-recovery improved . . . stiffness controlled as desired.

Ask for Bulletin NP 28, "Textile Finishing with Celanese Acetate Emulsions." It describes properties, applications, typical formulations and processing procedures.

Celanese Chemical Company, a Division of Celanese Corporation of America,
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Celanese®

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Celanese CHEMICALS

Harshaw Diversified Products for the textile industry

ORGANIC PIGMENTS

For cotton printing and dyeing

DYESTUFFS

Disperse • Alizarine • Chrome • Acid

SHARPRINT CARRIER

Trademark

For maximum results on polyester fibers, many printers find the addition of Harshaw Sharprint Carrier to their disperse printing pastes solves the difficult problem of low color yield and lack of sharpness.

NF AND TECHNICAL

Tannic acid • Pyrogallic acid
Gallic acid • Benzoquinone

For more information about the items listed above write to:

ZINSSER DIVISION
The Harshaw Chemical Company
Hastings-On-Hudson 6, N. Y.

UVERSOFT "D"

• UVERSOFT "D" is a cationic surface active agent which produces a full, soft hand with little, if any, reduction in moisture absorbency of the TREATED material. It can be exhausted from a long bath, and has an excellent retention in an aqueous system.

ZINC NITRATE FLAKE

Harshaw Zinc Nitrate Flake is especially suited for polymerizing resins currently being used for wrinkle-free and wash-and-wear fabrics.

TYPICAL AVERAGE ANALYSIS

Zn	25.20%
FE	0.001%
Pb	0.005%
H_2O Insoluble	.008%
pH of 5% solution	5.1%

For more information about the items listed above write to:

THE HARSHAW CHEMICAL COMPANY
1945 East 97th Street
Cleveland 6, Ohio

HARSHAW

Whether they be for outerwear, underwear, bedspreads, bath mats, towels, carpets, upholstery, draperies or what not (knitted or woven), Franklin Dyed Yarns are a standard part of many fashion fabrics. And with good reason, for:—

1. With the largest package dyeing capacity in the world and 4 plants, Franklin is a highly dependable source of supply.
2. The Franklin Compressible Spring assures uniform density of packages and hence uniform shades.
3. Franklin's unequalled laboratory facilities and half a century of experience assure strict quality control and the know-how to cope with difficult dyeing problems.

Get in touch with our nearest plant or office and let us quote on your yarn dyeing requirements.

Franklin Process
COMPANY
Largest Package Dyers in the World
A DIVISION OF INDIAN HEAD MILLS, INC.

Dyers of natural and synthetic yarns on
Franklin compressible spring exclusively.

PHILADELPHIA • GREENVILLE • CHATTANOOGA • FINGERVILLE, S. C.
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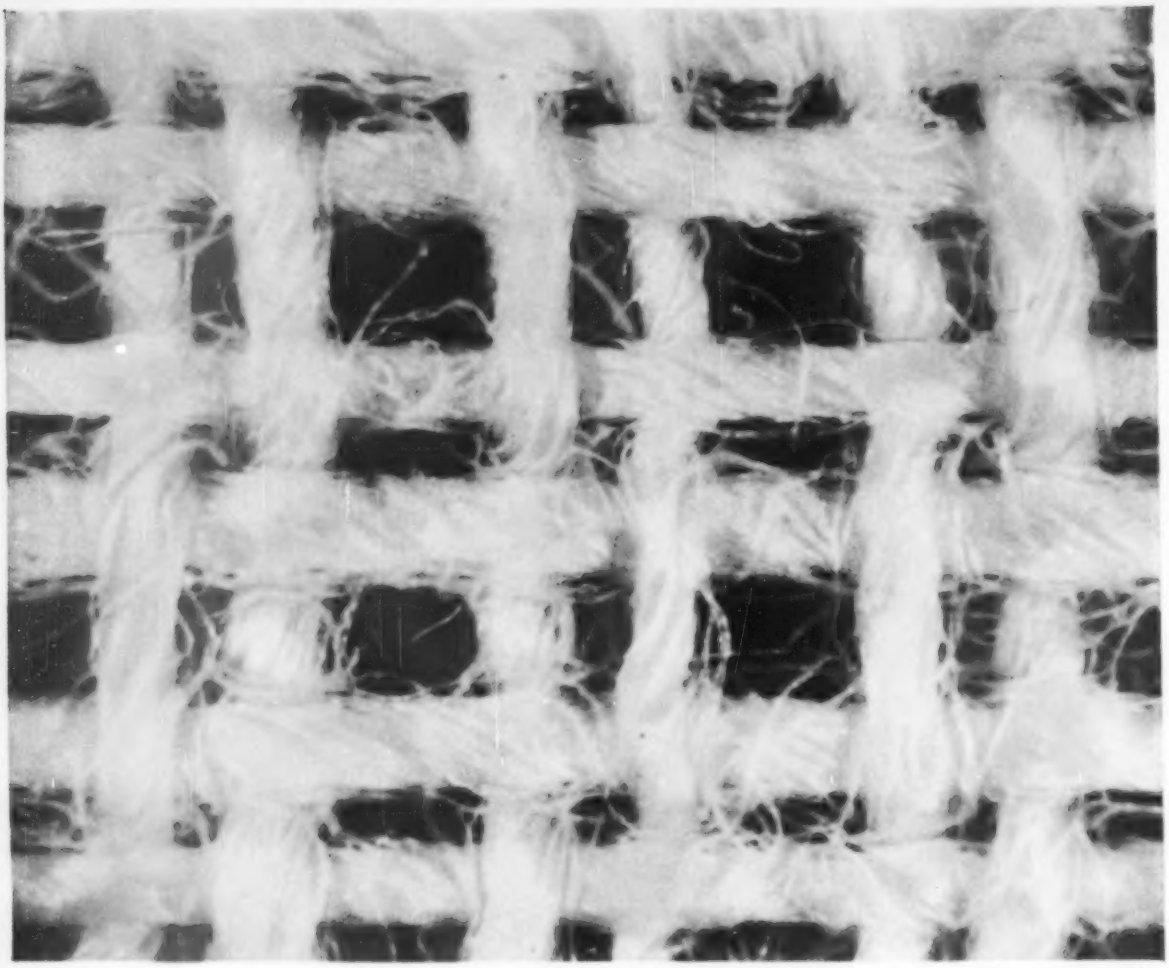

Photomicrograph of cotton bleached with hydrogen peroxide

High-white and handsome!

Textiles with high whites and handsome colors usually have the most eye appeal. Shell Chemical products play an important role in the production of today's attractive and useful fabrics.

Hydrogen peroxide, a rapid, economical bleach, also finds use as a developer for vat dyes. In the production of minimum-care cotton fabrics, Eponite® 100 imparts wrinkle resistance. It also is an ingredient in an antistatic finish for synthetics.

The cotton fibers shown in the picture were mercerized for added luster. Another Shell product, hexylene glycol, was used as a penetrant in this process. Glycerine is a mercerizing assistant and a moisturizer in pigment printing. Shell Chemical alcohols and ketones find use as resin solvents and dye dispersants.

Choose the chemicals for your own process requirements from the column at the right. A Shell Chemical representative will be glad to discuss your specific needs. Write or phone your nearest Shell Chemical office for samples and technical literature.

Acetone
Diacetone Alcohol
Epichlorohydrin
Eponite® 100
Ethyl Alcohol
Glycerine
Hexylene Glycol
Hydrogen Peroxide
Isopropyl Alcohol
Methyl Ethyl Ketone
Methyl Isobutyl Ketone
Sodium Sulfonates

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SHELL

American Carpet Mills, Cartersville, Ga., is building a $2-million plant. The new 15,280-sq.-ft. plant will house all the operations of the company. The company expects to be in operation at the new plant by Sept. 1, and will employ about 200.

Beaunit Mills, Inc., New York, N. Y., has started a pilot plant operation for processing limited quantities of polypropylene. The company has also bought machinery to spin the material.

Bemis Bros. Bag Co., St. Louis, Mo., is building a new 155,000-sq.-ft. plant in Newark, Calif. The plant will include 90,000 square foot of space for manufacturing, 60,000 square feet for warehouse and shipping area, and 5,000 square feet for office space. The plant will manufacture burlap, cotton and waterproof laminated-textile bags, and multiwall, open-mesh and other paper bags. About 200 persons will be employed.

Border City Div. of Sagamore Mfg. Co., Fall River, Mass., has sold its mill and equipment. The plant contained 500 XD looms, wrapping, sizing, winding, and throwing machines and other auxiliary items.

Bothwell Mills, Inc., Newton N. C., is doubling its facilities. The company has bought new machines for the manufacture of socks and anklets, bringing the total of machines to 169. From 25 to 30 employees have been added to the staff.

Burlington Hosiery Co., Wadesboro, N. C., has announced that seamless hosiery will be produced this summer at the plant.

Carleton Woolen Mills, Rhodale, Mass., has bought six Hunter fiber meters designed for wool and long-staple, man-made fibers.

Caswell Seamless Hosiery Mill, Inc., Yanceyville, N. C., is a newly chartered corporation with an authorized capital stock of $100,000. The corporation succeeds the partnership business formerly operated as Caswell Seamless Hosiery Mill.

Chadbourn Textile Co., Chadbourn, N. C., is building a $65,000 addition to its plant. The company plans to bring its employee total to 1,200 when the addition is completed.

Corlin Processing Co., Landis, N. C., is in operation. The new plant dyes and bleaches gray goods produced by its parent company, Linn and Corriher Mills, also in Landis.

Corsicana Cotton Mills, Corsicana, Tex., has appointed Wellington Sears Co., New York, N. Y., selling agents for its products.

M. Dursin & Sons, Inc., Woonsocket, R. I., is a newly organized company that will specialize in commission dyeing, vigoureux printing, and recombing. The plant is located in the former Argonne Worsted Co. dyehouse.

Homespun House, Beverly Hills, Calif., is building a piece-goods plant in Port Royal, S. C.

Joanna Cotton Mills, Joanna, S. C., has ordered new change-over equipment and carding devices.

A & M Karagheusian, Inc., New York, N. Y., has bought the Harpootlian Carpet Co., Neptune, N. J. The newly acquired plant will operate as a subsidiary of Karagheusian under the name Gulistan Customtuft, Inc., and will manufacture custom tufted carpet. Karagheusian's Karacustom lines, which have been produced for the past year in Freehold, N. J., will be manufactured and marketed by the new subsidiary.

Kayser-Roth Corp., New York, N. Y., is negotiating to buy A. Stein & Co., New York, N. Y., manufacturer of belts, suspenders, and foundation garments.

Ludlow Jute Co. Ltd., Needham, Mass., has opened a new mill in Jamaica. The new plant will occupy 150,000 square feet of space and when completed will employ about 500 people. Ludlow will import from 20,000 to 25,000 bales of jute from Pakistan per year to the new mill. The jute will be made into carpet backing for export to the United States and Commonwealth areas.

Millburn Mills, Inc., West Warwick, R. I., is converting its newly purchased plant in Durham, N. C., for dyeing and finishing operations. The company has installed a concrete floor in the Durham plant at a cost of $25,000, and plans other modernization including the installation of new equipment.

Moosup Finishing Co., Sterling, Conn., has closed. The company started production over a year ago, in the former U. S. Finishing Co. building.

Spartan Mills, Spartanburg, S. C., is expanding its Beaumont Mills Div. through projects totaling $95,000. The company will spend $60,000 of the total for a new 13,000-sq.-ft., company-operating merchandising store that is expected to be completed by August.

Stonecutter Mills Corp., Spindale, N. C., has started building an addition to its plant at an estimated cost of $1½-million. The new addition, totaling 80,000 square feet, will double the present plant space. An additional 150 to 200 people will be employed.

West Point Mfg. Co., West Point, Ga., has announced plans for a $2½-million expansion in the Shawmut Mill Div. The new operation will produce fine combed-yarn fabrics, the first of its kind in the company's eight plants.

Wunda Weve Carpet Co., Greenville, S. C., has started a $1,488,000 expansion program. Three additions will be built as part of the program.

Walt Parker, who can duplicate and study virtually every pulping problem in a specially equipped laboratory, says you'll like doing business with Columbia-Southern

In the Pulp Laboratory at Columbia-Southern's Barberton, Ohio, Research Center, Walt Parker and his colleagues set up the full range of chemical situations encountered in commercial pulp mills. Thus they can study at first hand any particular questions important to mills using Columbia-Southern chemicals. Evaluation of customer formulations and methods have led to major savings and boosts in efficiency for a large number of pulp and paper producers.

When analyzing customer problems, the Pulp Laboratory engineers work closely with customer technical personnel, carefully checking every step along the way. This relationship insures *practical* results when the findings of the laboratory are put into operation in the customer's mill.

Concern that customers are getting the most efficient use of Columbia-Southern products is a principle followed throughout all departments. It is very evident in the regular activity of the Technical Service Engineers, for example, who provide consultation on unloading, storing, and handling potentially dangerous chemicals such as chlorine and caustic —to mention just one area of Technical Service responsibility.

Customer-oriented concern all along the line explains why so many leading organizations, representing all manufacturing industries, rely on Columbia-Southern for their basic chemical needs.

Anhydrous Ammonia, Barium Chemicals, Benzene Hexachloride, Calcium Chloride, Calcium Hypochlorite (Pittchlor®, Pittabs®), Carbon Tetrachloride, Caustic Potash, Caustic Soda, Chlorine, Chlorinated Benzenes, Chloro IPC, Chrome Chemicals, Hydrogen Peroxide, Muriatic Acid, Pacific Crystals, Perchlorethylene, Rubber Pigments (Calcene®, Hi-Sil®, Silene®), Soda Ash, Sodium Bicarbonate, Sodium Sulfate, Titanium Tetrachloride, Trichlorethylene

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COLUMBIA-SOUTHERN CHEMICAL CORPORATION • A Subsidiary of Pittsburgh Plate Glass Company • One Gateway Center, Pittsburgh 22, Pa.

NEW LITERATURE

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

TEXTILE MACHINERY & AUXILIARY EQUIPMENT

L-1—Recording spectrophotometer is described in 12-p. Bulletin GEZ-3031, which lists features and operating principles. Cost-saving applications, product specifications, diagrams and tables are included. General Electric Co.

L-2—Printweigh scales are described in 4-p. bulletin (Form 2023) that lists ways in which automatically printed weigh data help cut costs. Accessories and custom adaptations are also listed. Toledo Scale Corp.

L-3—Automatic cooking system designed for high-solids finishing preparations is described in a bulletin covering adaptability to a variety of formulations and productions of uniform-viscosity pastes. A. E. Staley Mfg. Co.

L-4—Evaporators, single and multiple effect, are described in a 28-p. illustrated bulletin on design and function of types used in evaporating solvents and concentrating solutions. Chicago Bridge & Iron Co.

L-5—Card-room ceiling cleaner that provides automatic, continuous cleaning of walls, ceilings, and other hard-to-reach areas is described in a prepunched loose-leaf sheet (2 p.) easily added to company's catalog. American Moistening Co.

L-6—Valves with spherical union connections are described in Data Unit 377 (2 p.) which gives specifications, sizes, etc.; shows engineering drawings; illustrates units with photos; lists applications. Jerguson Gage & Valve Co.

L-7—Drum mixing equipment, featuring quick-release drum holders and floor-level loading, is described in 12-p. Bulletin DM-290, which shows photos, loading charts, and specifications. Process Equipment Div., U.S. Stonewear Co.

L-8—Heated gages and valves that have many uses where liquids must be kept at higher than ambient temperatures are described in 4-p. Data Unit 363, which contains photos, drawings, design details. Jerguson Gage & Valve Co.

L-9—Submersible sump pump, featuring easy installation, is described in 4-p. catalog (Form 59-1-450) giving specifications and dimensions, performance table, operating characteristics. Cutaway photo shows construction. Fostoris Corp.

L-10—Temperature-control packages called Simplytrols, featuring a wide variety of uses, are described in 12-p. Bulletin 108, which explains and illustrates explaining operation, circuits, safety features. Assembly Products, Inc.

L-11—Acrylonitrile chart is part of a 16-p. booklet that shows reactions and derivatives that result from organic syntheses of acrylonitrile and lists uses for acrylonitrile derivatives. Plastics Div., Monsanto Chemical Co.

L-12—Emulsions, solutions, resins, alcohols, thickeners, and solvents are listed and described in a 12-p. Product Directory that lists uses and properties as well. Information is arranged in tabular form. The Borden Chemical Co.

L-13—Pressure and temperature recorders featuring spiral bourdon tube and bellows-type pressure elements are pictured in 8-p. Catalog 800. Details on pressure and temperatures. U. S. Gauge Div., American Machine & Metals, Inc.

L-14—Creslan acrylic fiber is described in a new bulletin that includes properties, performance data, stress-strain chart, and helpful data on processability, dyeability, and washability. Bulletin supplements previous technical information available. Fibers Div., American Cyanamid Co.

ENGINEERING

L-15—Power-transmission equipment is described in a 98-p. catalog that features engineering drawings, dimensions, weights, and technical data. A large section is devoted to general engineering data. Dodge Mfg. Corp.

L-16—Steam and water service are described in this manual, intended chiefly as a guide in the selection of automatic heating and cooling controls. Domestic hot water and fuel oil heaters are Powers Regulator Co.

L-17—Surface unit heaters of one-piece construction high-test cast iron are described and illustrated in a catalog; includes air-distribution charts, heating capacities conversion tables. D. J. Murray Mfg. Co.

L-18—Stainless-steel filters are described in a bulletin which lists stock and non-stock filters and elements and shows methods of specifying filter area requirements and characteristics of high-pressure filters. Micro Metallic Div., Pall Corp.

L-19—Lightweight air hoists are described in service manual. Complete operating, maintenance, and inspection instructions, parts lists and tool diagrams for various models of air hoists are included. Thor Power Tool Co.

GENERAL

L-20—Industrial truck with 7,000-lb. capacity is described in bulletin which includes photos, diagrams, and anaylsis of each main working part of the truck. The carton-pile control system is also illustrated. Elwell-Parker Electric Co.

L-21—Sludge collector, first in a new line of waste-treatment mechanisms designed to meet specific requirements of municipal and industrial treatment plants, is described in a 6-p. bulletin. Chain Belt Co.

. . . *Turn to page* 138

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costs–
safely!

"AC" catalysts help you achieve finer results at lower cost—through longer resin bath life, faster more complete curing of thermosetting resins, with minimum resin add-on. And Monsanto AC Catalysts are compatible with practically all finishing agents. Write for complete technical data, and expert finishing counsel, to Monsanto Chemical Company, Plastics Division, Room 746, Springfield 2, Mass.

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Other Monsanto textile chemicals: Resloom® E-63 chlorine resistant resin; Resloom E-50 cyclic urea resin; Resloom HP and M-75 melamine resins; Stymer® sizes; Lytron® polystyrene latices

CIRCLE 97 ON READER SERVICE CARD

BRIEFS

on sodium sulfhydrate savings
buying caustic soda
dewaxing cotton quickly

LOOK AT THE LID . . . AND SAVE

This is a purchasing agent figuring out how many ways he'll save money on his next order of sodium sulfhydrate from Hooker. The lid from our sodium sulfhydrate drum gives him some clues.

Notice its size. A drum with a full open head empties more rapidly than either the regular 14-inch or 18-inch sizes, and empties completely. You save time in handling.

Note, too, that it's brand new, as is the drum. This fact, plus a lacquer lining on lid and drum, makes it next to impossible for the sulfhydrate to pick up troublesome iron and moisture.

The drum itself holds 400 pounds of sulfhydrate — 50 pounds more than older-style drums. It helps reduce handling costs as much as 14%—and saves on storage space. Last, shipping cost per pound of chemical is less.

If *you* aren't getting savings like these with the sodium sulfhydrate or sodium sulfide you buy, it's easy to begin. Just write "Hooker" on your next order—and specify 400-pound drums.

YOU, TOO, CAN BE AN EXPERT

Carry this little booklet in your pocket, and you'll be able to hold your own in almost any discussion of caustic soda buying.

It gives you the basic economics on 50% and 73% liquid caustic, complete with a nomograph for quickly figuring which strength is your better buy.

Another nomograph helps you estimate almost at a glance your liquid caustic requirements for various process solutions.

There's information on solid and flake caustic soda, too; a listing of dimensions and capacities of containers in which you can buy Hooker caustic soda; and a check list of things to weigh when you're deciding on a supplier.

To get a copy, just check the coupon.

HOW TO DISSOLVE A WAX PROBLEM

This boiling solvent, trichlorethylene, is widely used for taking the grease off gears and other metal parts.

But did you ever think of using it to take wax out of cotton? It works—like magic; produces absorbent, well-bottomed cotton goods in a matter of minutes. Goods retain as little as 0.1% residual wax.

A British firm holds the U. S. patent for the process. We'll be glad to put you in touch with the right people if you're interested—and work with you on your requirements for trichlorethylene, which we supply through a nationwide network of distributors.

For more information on Hooker chemicals mentioned, check here and mail with your name, title, and company address.

☐ Sodium sulfhydrate ☐ Caustic Soda Buyer's Guide (booklet)
☐ Sodium sulfide ☐ Trichlorethylene (bulletin)

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1707 Forty-seventh Street, Niagara Falls, N. Y.

Sales Offices: Buffalo Chicago Detroit Los Angeles New York Niagara Falls Philadelphia Tacoma Worcester, Mass.
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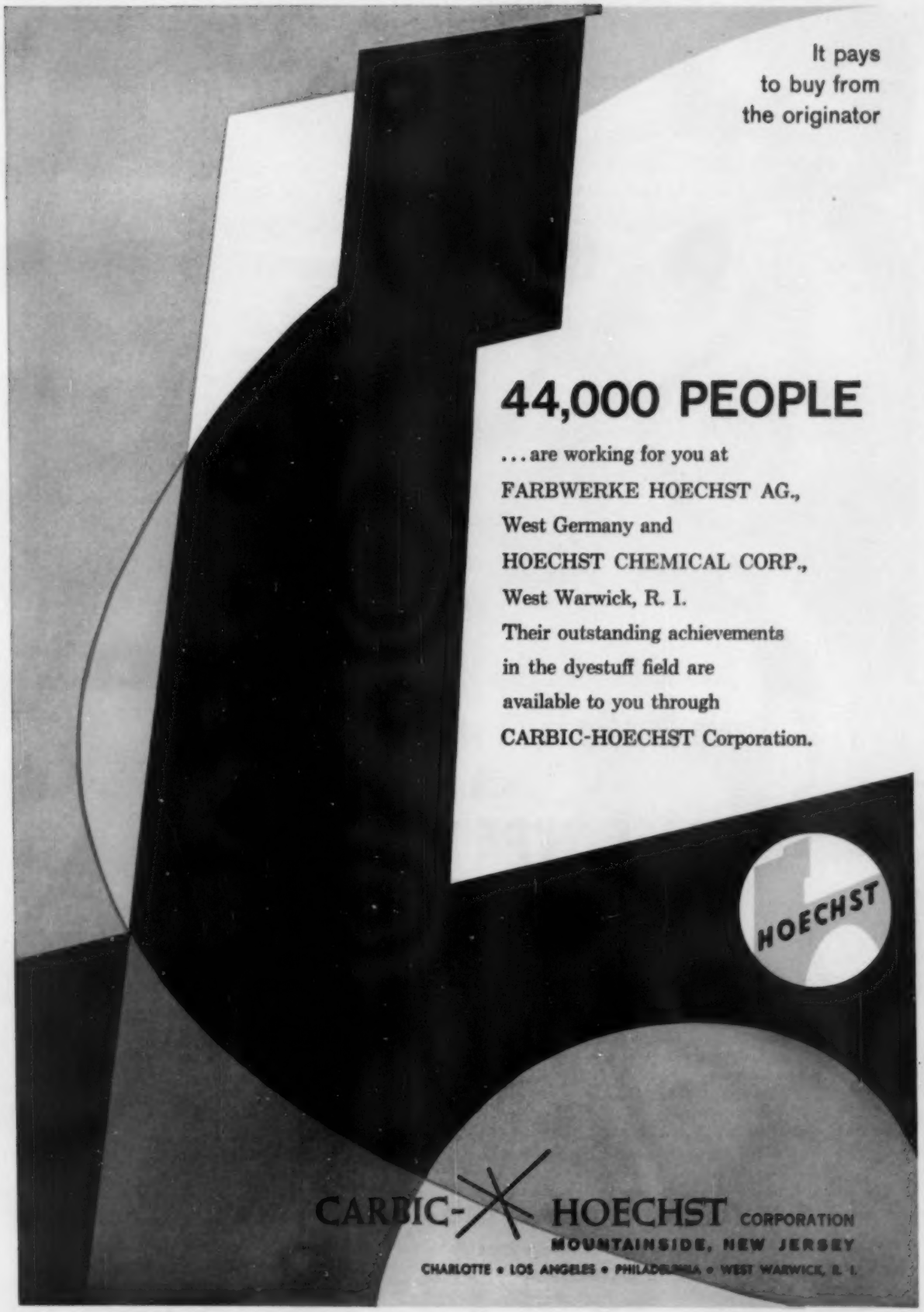
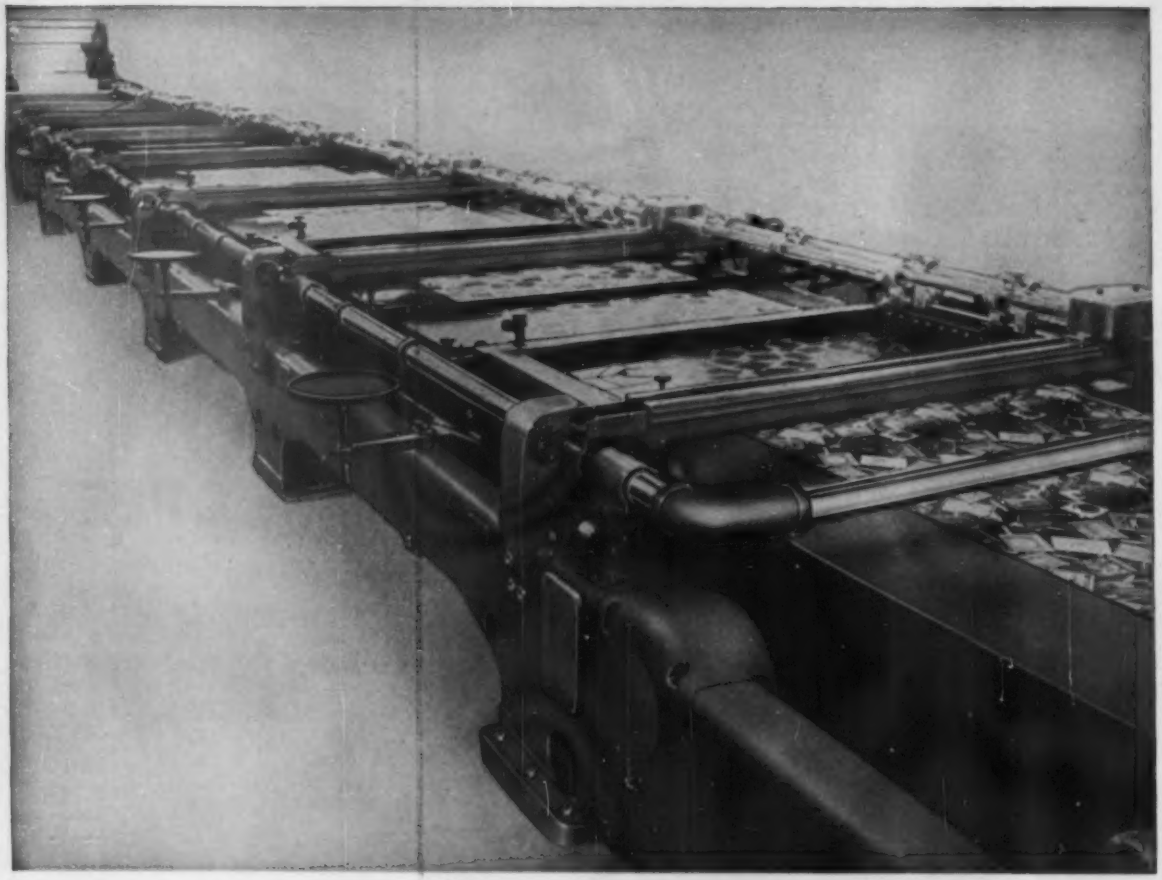
HOOKER CHEMICALS PLASTICS



CIRCLE 99 ON READER SERVICE CARD 99



Screen Print up to 12 yds. of Fabric Per Minute with an ICHINOSE-TYPE Patented MULTI-COLOR AUTOMATIC SCREEN PRINTING MACHINE

The Ichinose Screen Printing Machine, with more than 60 patented features, screen prints all kinds of fabric perfectly in up to 21 colors at nearly double the speed of other machines on the market. Finished prints are of highest quality, clean, sharp, accurate and far superior to hand or roller prints.

Ichinose means greater economy, too, both in initial cost and in operation and maintenance. It consumes less power, steam, and dye paste, while cutting labor costs to only two operators per machine. Change of design and colors takes less than 30 minutes.

Machines with various different repeats up to 72" and fabric widths up to 60" can be supplied.

To ensure complete satisfaction, all Ichinose machines are installed by our own technicians anywhere in the world. Write today to Dept. TW8 for illustrated catalogue and printed fabric samples.

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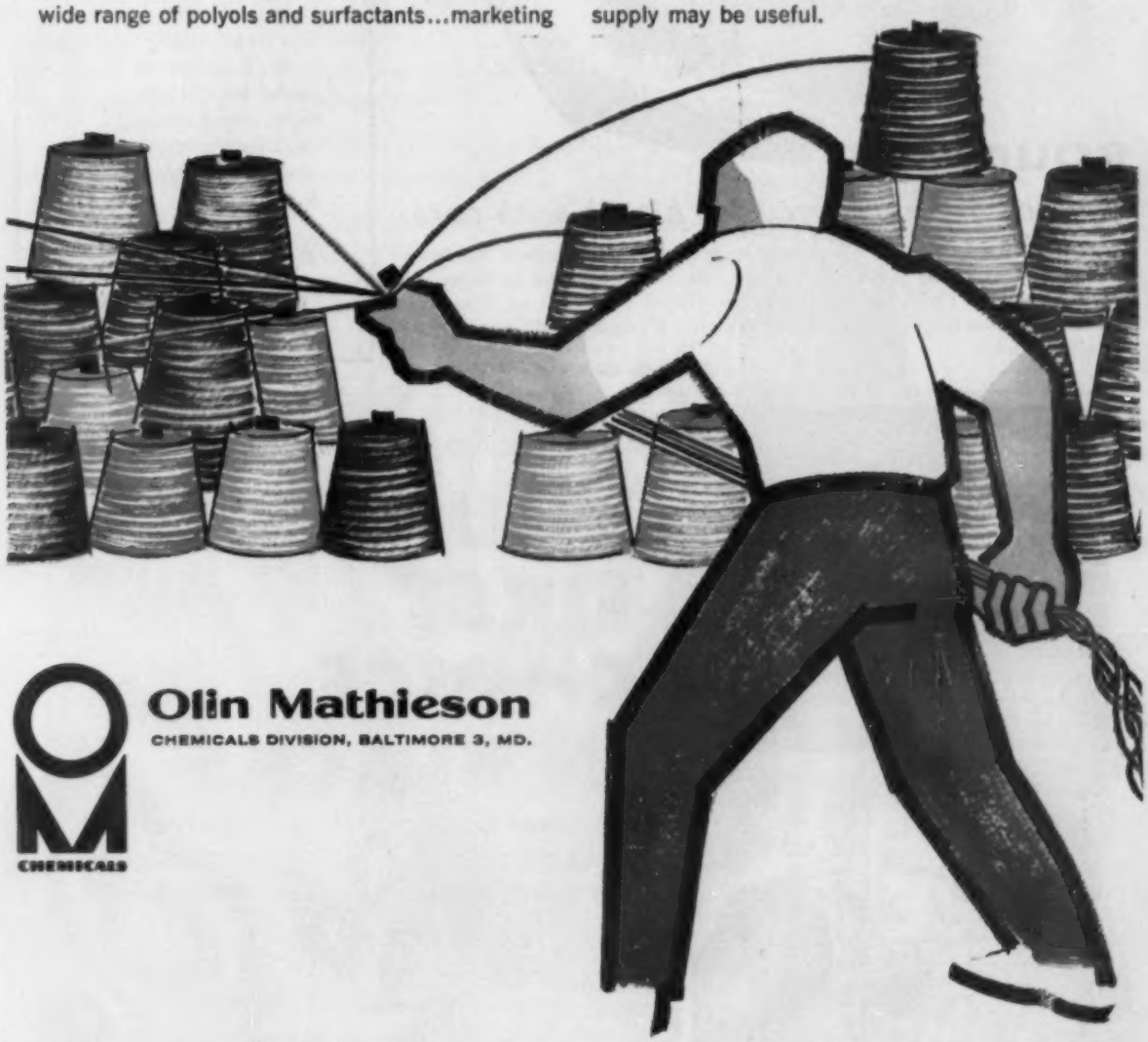
in textiles

New fabrics, fibers and finishes are better than ever. Modern textile chemistry has created stronger, tougher tire cord, true wash-and-wear clothing, and processes that render fabrics resistant to water, grease, creasing, and even bacteria.

To anticipate the constant progress in textiles, Olin Mathieson is on the move. To keep pace we are increasing caustic/chlorine production in growth areas...adding new plant facilities for a wide range of polyols and surfactants...marketing urea of outstanding quality from a new high-purity process. Current research on a new continuous bleaching process promises a significant advance in this basic operation.

Change is the challenge, and the future depends on the ability to predict change and prepare for it. As a step in providing for your future let us review your chemical requirements now. In terms of future—or present—our experience in chemical supply may be useful.



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CHEMICALS DIVISION, BALTIMORE 3, MD.

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Wyandotte Bicarbonate of Soda comes in several grades, to meet all textile requirements. It is the same high-quality, pure bicarb you find on drug-store shelves . . . and it's priced at carload savings. Get in touch with us. *Wyandotte Chemicals Corporation, Michigan Alkali Division, Wyandotte, Michigan. Offices in principal cities.*

CIRCLE 26 ON READER SERVICE CARD

ATTENTION...

CHEMISTS, DYERS FINISHERS and all those engaged in Chemical Treatment Process

The new FACT FILE issue will come to you next month with 16 pages of useful handbook-type information on bleaching, dyeing, finishing techniques.

WATCH FOR THIS IMPORTANT ISSUE

FIRST

from BALTIMORE

The FIRST NATIONAL NOMINATING CONVENTIONS for

President and Vice-President of the United States were held in BALTIMORE in 1831 and '32.

Those nominated for president were:

WILLIAM WIRT, Anti-Masonic Party
HENRY CLAY, National Republican Party
ANDREW JACKSON, Democratic Party

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Consult your local dyestuff distributors for information and samples. Shipments can be made from our Baltimore factory.

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Do you check these points When Buying **STAINLESS STEEL** *Valves?*

- ☐ **How good are the castings?**
- ☐ **How precise is the machining?**
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- ☐ **How sound is the design?**

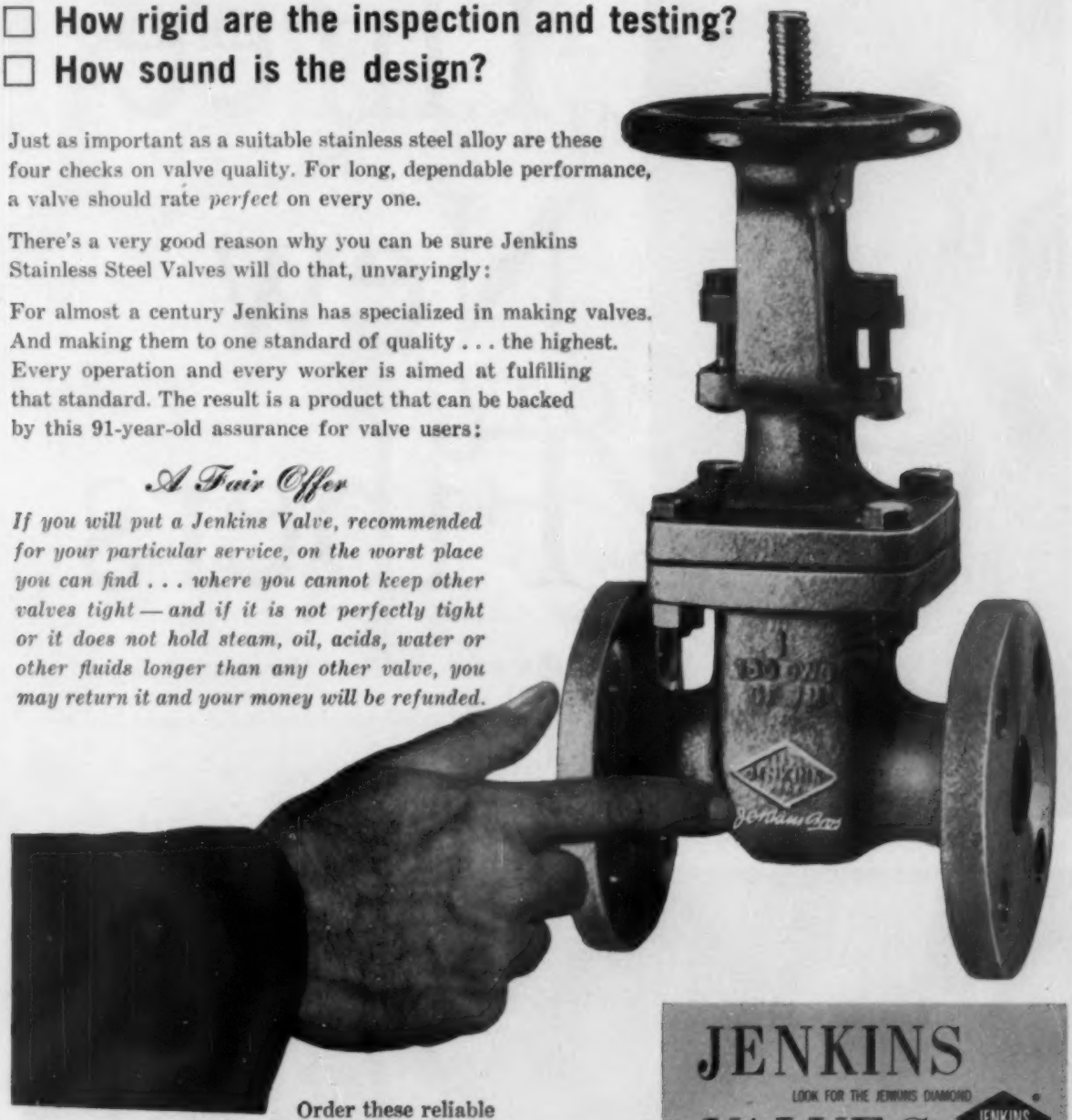
Just as important as a suitable stainless steel alloy are these four checks on valve quality. For long, dependable performance, a valve should rate *perfect* on every one.

There's a very good reason why you can be sure Jenkins Stainless Steel Valves will do that, unvaryingly:

For almost a century Jenkins has specialized in making valves. And making them to one standard of quality . . . the highest. Every operation and every worker is aimed at fulfilling that standard. The result is a product that can be backed by this 91-year-old assurance for valve users:

A Fair Offer

If you will put a Jenkins Valve, recommended for your particular service, on the worst place you can find . . . where you cannot keep other valves tight — and if it is not perfectly tight or it does not hold steam, oil, acids, water or other fluids longer than any other valve, you may return it and your money will be refunded.



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VALVES
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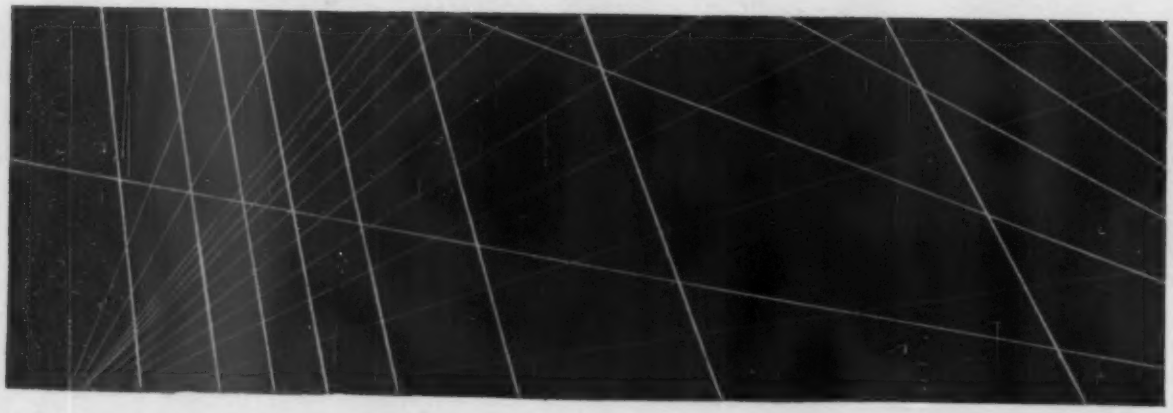
CIRCLE 103 ON READER SERVICE CARD 103

NOW! Three New Fibers!



3 NEW MODIFIED AVISCO RAYON FIBERS

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STABLE RAYON

A new rayon fiber, similar to cotton with respect to elongation and elastic properties. Blends beautifully with cotton or synthetics and can be readily Sanforized or mercerized. It doesn't require special finishing equipment or techniques.

AVLIN*

MULTICELLULAR RAYON

A new modified Avisco rayon fiber—the only fiber of its kind now available. Avlin has a unique self-bonding characteristic, creating a new firmness and bulk in fabrics.

AVRON*

HIGH STRENGTH RAYON

A high strength rayon staple fiber which can be used 100% or blended with cotton and other man-made fibers. Its strength makes possible the spinning of finer yarns and also creates a strong and durable yarn for the home furnishings industry. Avron rayon is much stronger after repeated washings when wash and wear finishes have been applied than a comparable 100% cotton fabric with a wash and wear finish. Fabrics have a soft, luxurious hand and colors are rich and lively.

The names AVRIL, AVLIN, and AVRON may be used in fabrics of 100% rayon or in blends which meet American Viscose Corporation standards of quality control.

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IN SEAT BELTS...

IN FIRE HOSE...

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Caprolan nylon heavy yarns are also used in conveyor belts, seine twine, cordage, upholstery, and dozens of other end uses . . . where toughness, strength, and flexibility are imperative. The all-round excellence of Caprolan heavy yarns includes an amazing affinity for virtually all classes of dyestuffs and compatibility with every kind of texturing process.

High-performance Caprolan nylon heavy yarns, pioneered and developed by Allied Chemical, are making an ever-increasing contribution to textile progress in a wide diversity of home and industrial uses.

If you have a tough job, we have the tough yarn for it. Whether it is improving an existing product, or creating a new one, let us help you with our wide range of deniers in Caprolan nylon heavy yarns.

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THE NYLON FIBER BY ALLIED CHEMICAL

Allied Chemical

Fiber Marketing Dept., National Aniline Division, 261 Madison Ave., New York 16, N.Y.

What's new this month in . . .

Fibers, Yarns, and Fabrics

One More Spandex

International Latex Corp. has developed a new elastomer spandex fiber.

This is the third of the new generic class of fibers. The first spandex fiber, Du Pont's Lycra, was introduced last fall.

The new ILC fiber is being introduced this fall in a brassiere manufactured by Sarong, Inc., wholly owned subsidiary of ILC.

Fiber Like a Yarn

Dawbarn Bros., Inc., has developed a polypropylene monofilament slub fiber.

Fabrics containing the new slub fibers are durable, resilient, easy to clean, and inexpensive.

Applications for the new fiber include automotive upholstery, indoor and outdoor upholstery, accessories, luggage, wall coverings, hi-fi grill cloths, and television sets.

Bunting Stretches

Kapart Creations has introduced a knitted baby bunting of two-way stretch fleece. It is made of Creslan and nylon.

The one-size bunting fits the child snugly from birth until he weighs 20 pounds.

Orlon Family Grows

Du Pont introduced last month Orlon Type 72 staple—the ninth member of the company's family of Orlon fibers.

The new fiber is slated for use in cotton-blended sport shirts, underwear, and other next-to-skin apparel. The key feature of the new Orlon staple, the company said, is its exceptional built-in whiteness.

Orlon Type 72 is offered in 1.5 denier in a cut length of 1½ inches. It is blendable in the cotton system. Price: $1.08 a pound.

Carpet from Canada

Peerless Rug Co. Ltd. of Canada is now producing tufted carpets of textured Caprolan nylon.

The company is producing its first Caprolan carpet in 12- and 15-ft. widths and in a range of 20 colors. The carpet will retail in Canada for about $14 per square yard.

Coming: Spring '61

Peerless Woolen Mills is showing a spring collection of Acrilan-wool blended fabrics for men's, students', and boys' wear. The blend is 65% Acrilan and 35% wool.

The new collection is shown in a variety of muted colors, plaids, solids, and heather shades with individually styled lines for suitings, slacks, and jackets.

What Women Want

A preliminary report issued last month by the U. S. Dept. of Agriculture indicated that women prefer cotton to other fibers for blouses, summer dresses, and summer skirts.

This fact was determined as a result of interviewing 2,310 women between the ages of 18 and 65 in May and June 1959. Market researchers asked the women about their fiber ownership and preferences for dresses (summer, between-seasons, and winter), blouses (summer and winter), summer skirts and suits, slips, and rainwear.

The survey also revealed that nylon is the leading fabric for slips. Wool tops the list for knit dresses. In rainwear, summer suits, or between-seasons dresses, no one fiber was a dominant choice.

The USDA report is part of a broad research program, which is designed to aid in expanding markets for farm markets.

Scent Sells

Comette Hosiery Mills reports that sales increased 10% when the company packaged its Comette and Real-Sheer hosiery in perfume-scented polyethylene film. The company also reports that the use of the package promoted impulse buying.

According to William C. Richter, sales manager for Comette, the additional cost for scented bags—less than 20¢ per thousand bags—is well worth while in terms of the extra sales appeal.

Knits for Fall

M. Lowenstein & Sons, Inc., has introduced new cotton knits for fall and winter. The new knits are called Persian Crystal. They were designed to resemble the curly look of Persian lamb. This new fabric is available in solids and two-color combinations.

Other new Lowenstein knits are Orlon-wool jerseys, brushed Orlon-wool interlocks, an Italian-look Orlon jersey, and an Orlon fleece with 100%-cotton back.

The Orlon and wool jerseys—in 80-20 blends—are in four-color combinations of 7-oz. better-dress fabrics—with or without brushed finish. The fabrics are patterned.

The brushed Orlon-wool interlocks—in 10-oz. weights for coatings and suitings—are available in 10 to 12 colors.

The 12½-oz. Orlon jersey is available in seven colors.

The Orlon fleece is available in both bright and semibright sheens.

It is soft and drapable. It is available in 60-in. widths and 12 colors.

New Creslan Carpet

Archibald Holmes & Son introduced last month the first carpet of Creslan. It is also the company's first acrylic carpet. The new tracery-patterned knitted carpet, called Conquista, is a blend of 80% Creslan and 20% modacrylic fibers.

The new carpet, high and low looped, is available in 10 colors influenced by the Spanish Southwest: Canyon Moss, Vista Blue, Spring Biege, Oasis Green, Oak Creek Beige, Desert Lilac, Tuscon Gold, White Mesa, Navajo Red, and Boulder Beige.

Conquista is available in 12- and 15-ft. widths and will retail for about $11 per square yard.

New Sell for Pellon

The Pellon Corp. is now offering a new sewing aid to home sewers. The new helper is called Pelomite.

Pelomite is a nonwoven fabric with tiny fusing granules on one side. The new fabric can be fused to an outer fabric by the heat of an iron. The addition of Pelomite stabilizes the fabric and enables the home sewer to achieve a good finished seam line in areas where extensive stitching tends to pucker or distort the fabric.

The new nonwoven is washable and dry cleanable. It is available in 18-in. widths and in black and white.

Three from Callaway

Callaway Mills, Inc., introduced last month three new carpets. One is a knitted carpet of continuous-filament nylon (Caprolan) called Aristique.

First shown at the Home-Furnishings Market, the carpet is knitted of Ombre-Dyed Yarns — Callaway's bulky, multicolored yarns.

Aristique is available in 10 colors —from neutral blends to high-fashion shades. It retails at $12.95 a square yard.

Electrique, another Callaway carpet that was introduced at the show, is a plush cut-pile carpet of Caprolan. As in Aristique, the company used multicolored yarns. Electrique retails at $12.95 a square yard.

Dramatique is Callaway's third new Caprolan carpet. It's a three-level, random-textured carpet and retails at $10.95 a square yard. It's available in 12 Ombre-Dyed colors.

New: Two Nonwovens

The Lantuck Div., Wellington Sears Co., has developed two new nonwovens for use in apparel.

Bias is a bias-stretch interlining fabric. Its content is predominantly nylon. It contains a latex binder. Available in white, tan, and black, Bias comes in three weights—2 ounces, 3.4 ounces, and 4.4 ounces. All three weights are available in 40½-in. widths. The 4.4-oz. weight is also available in 55½-in. width.

Lofty Lantuck is an all-nylon, multidirectional high-loft nonwoven. Lofty Lantuck is available in white and beige. It is produced in 47-in. widths and in three weights—3, 4, and 5 ounces.

Both Bias and Lofty Lantuck are washable.

Orlon Sayelle

Emile Bernat, Bernard Ullman, and Spinnerin have added Orlon Sayelle to their lines of hand-knitting yarns. The new yarn will be for sale this fall.

Taslan Blend

S. M. Hexter introduced a tweed upholstery fabric that contains Taslan textured nylon. Cotton, nylon, rayon, and jute are added to the Taslan-nylon content of the fabric.

For Upholstery, Too

Sidney Blumenthal & Co. introduced a new upholstery-fabric collection last month at the International Home Furnishings Market in Chicago.

The new fabrics are woven of Chemstrand's Cumuloft continuous-filament textured-nylon yarn. These fabrics represent the second application of Cumuloft nylon yarn. The first application was in carpets earlier this year.

Blumenthal's new upholstery fabrics are available in 34 styles.

New Yarn Gets Name

Cadon is the name for Chemstrand's new multilobal nylon yarn.

The company states that Cadon has application in woven and knit goods. It can be used in home furnishings, apparel and industrial fabrics.

Sanforized Zantrel

Zantrel, Hartford Fibres Co.'s cellulosic fiber, has been awarded the Sanforized label. Shrinkage control has been obtained within the prescribed tolerance.

New Carpet Bows In

Cabin Crafts, Inc., introduced last month Country Spice, a new Acrilan carpet.

Country Spice is a tufted fabric in a random high-and-low, all-loop pile. The yarn is a single multicolor. It is backed with the company's Perma-Cushion.

Available in 13 colors, the new Acrilan carpet comes in 12- and 15-ft. widths and is retail priced at $12.95 per square ward.

Suits: Still Lighter

The trend toward lighter-weight garments for spring continued this year, according to Harry A. Cobrin, executive secretary of the Clothing Manufacturers Association.

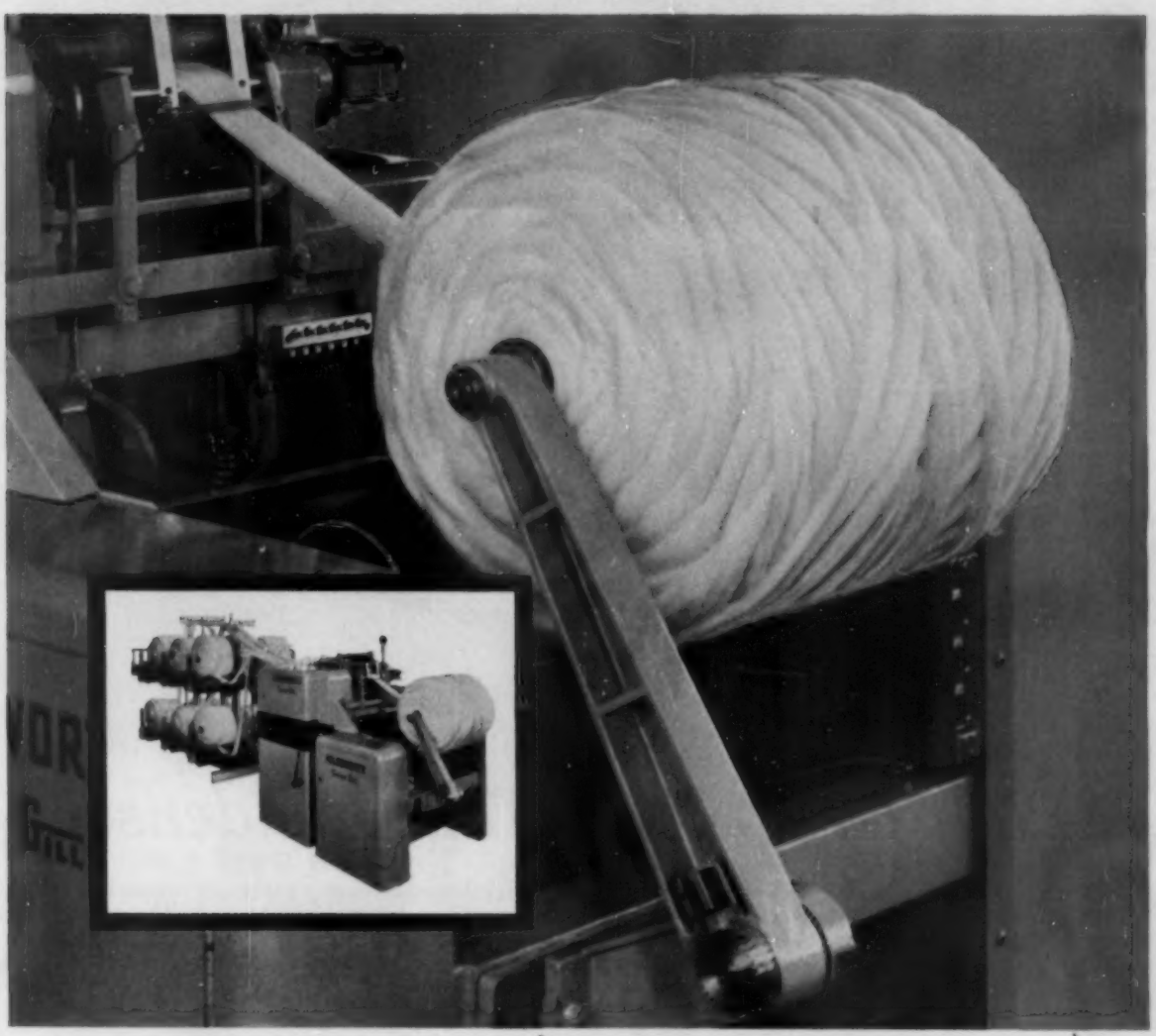
Spring 1960 was the first season when there were two classifications in suits—midweight and lightweight —rather than the general classification of summer weight.

There was a 26% increase in the production of mid- and lightweight suits for this spring over last year. Production of regular-weight suits dropped 3%.

NEW BIG

HOLDSWORTH SUPER GILL BALLER

Packages up to **70 lbs.** with **20" width** by **27" diameter** are now produced for preparatory operations by the new Holdsworth Super Gill Baller. **Double Ball Delivery** models make 13"x27" packages of conventional weights used in blending or finisher operations.



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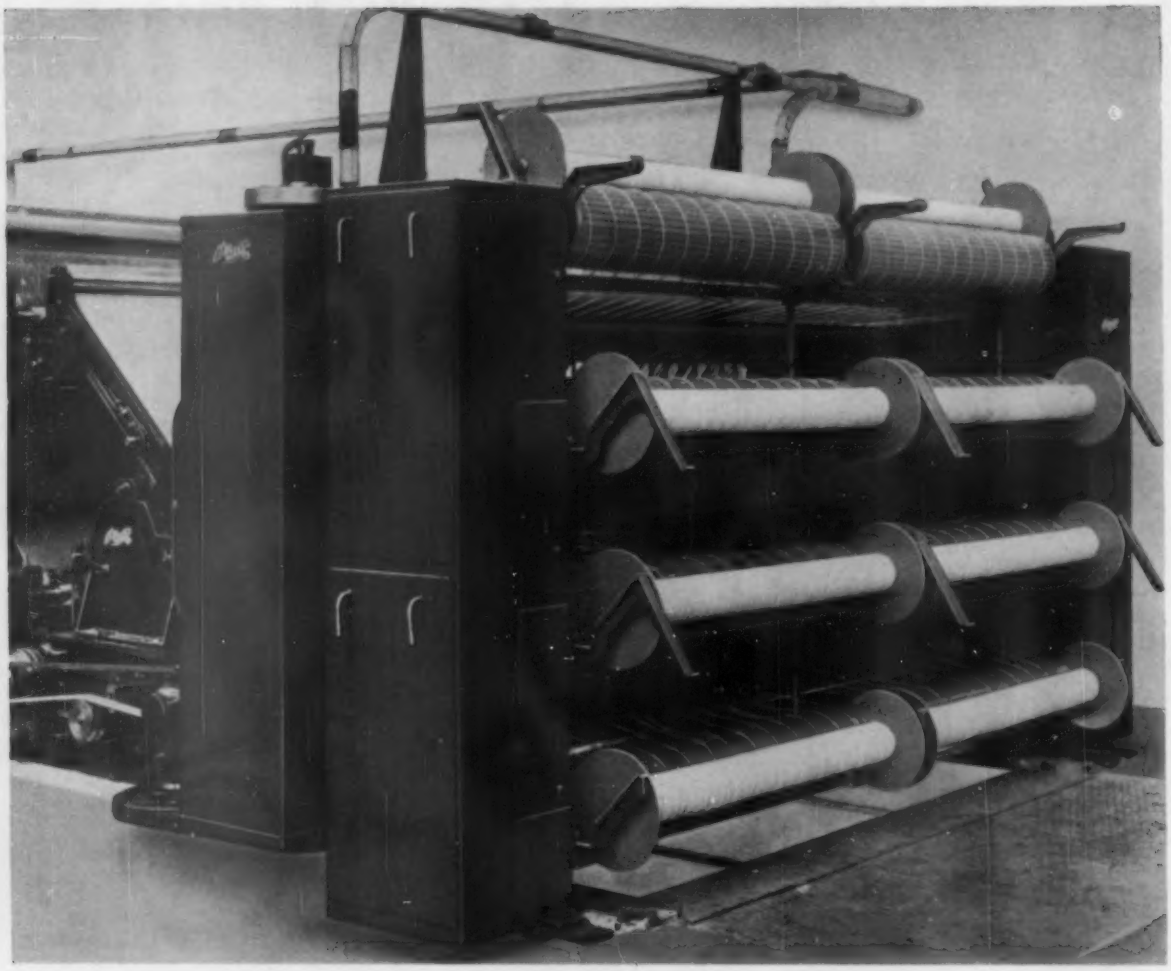
CIRCLE 109 ON READER SERVICE CARD 109

PLATT
WOOLEN MACHINERY



Platt High Speed Tape Condenser

The Platt tape condenser is an extremely versatile machine which gives exceptionally good performance on every class of work from heavy carpet and rug wools to the finest Saxonies. The high speed condenser, with motion shaft speeds of up to 600 r.p.m., enables the full productive potential of carding sets to be achieved on coarse work. The 4-height condenser being exhibited produces 8 half-length bobbins of 12 threads each and incorporates deep grooved dividing rollers, internal surface drum drive, multi-speed drive, traversing creel, centralized lubrication and is equipped for pneumatic waste thread removal.

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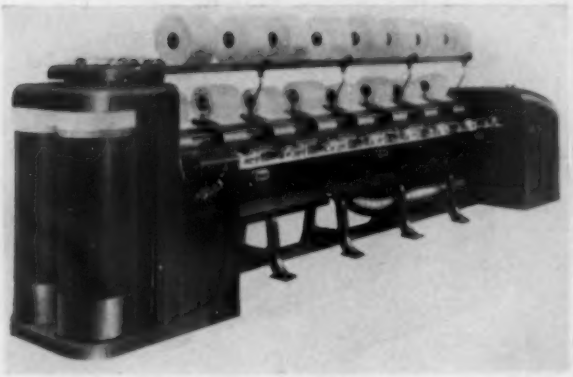

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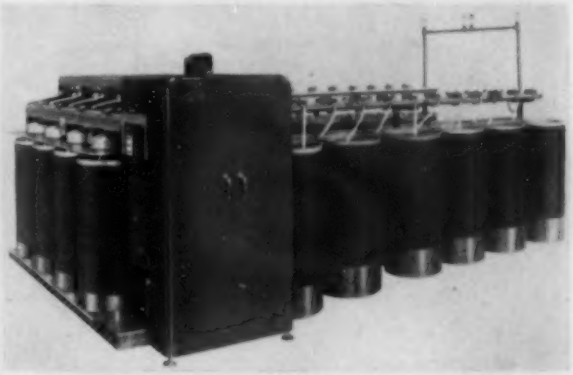
The Hartford 8 High Production Comber is reasonable in price and simple in operation. It has the greatest production per head and per unit of floor space ever achieved and is eminently suitable for all classes of work from super-combing through to upgrading.



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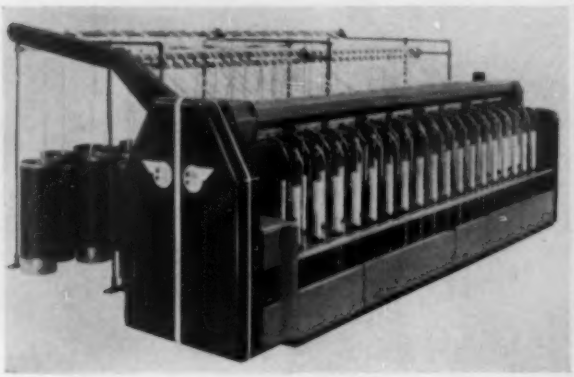

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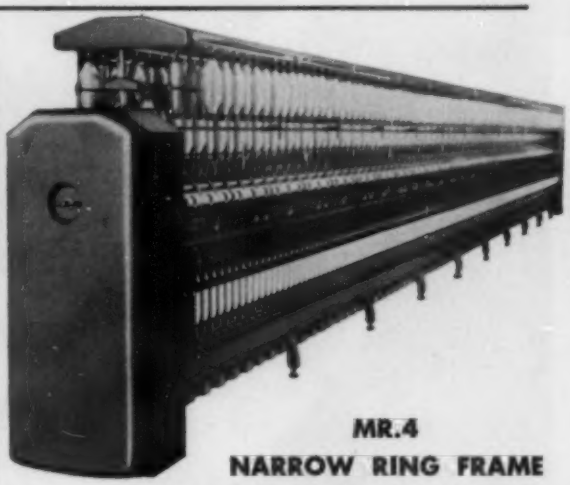

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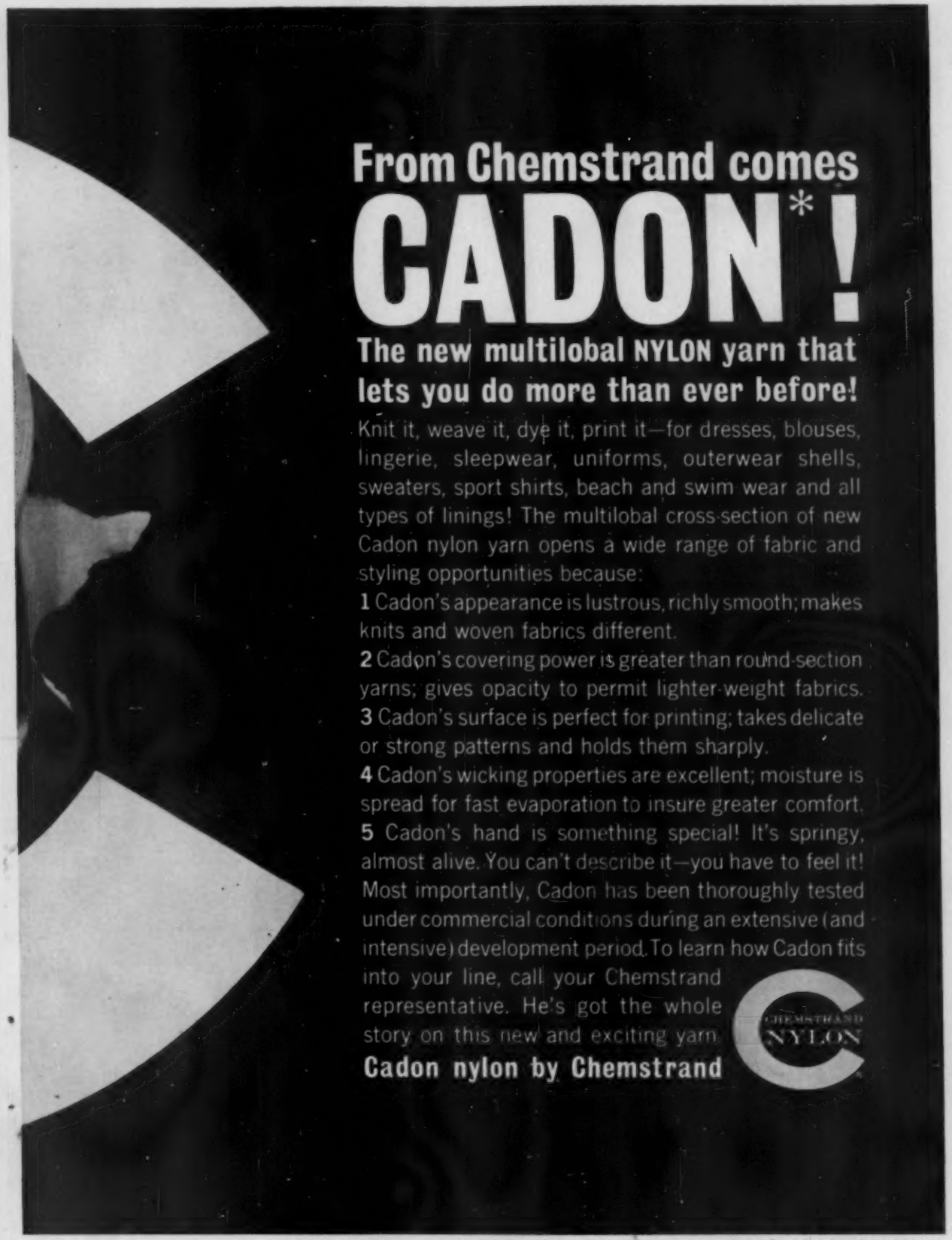
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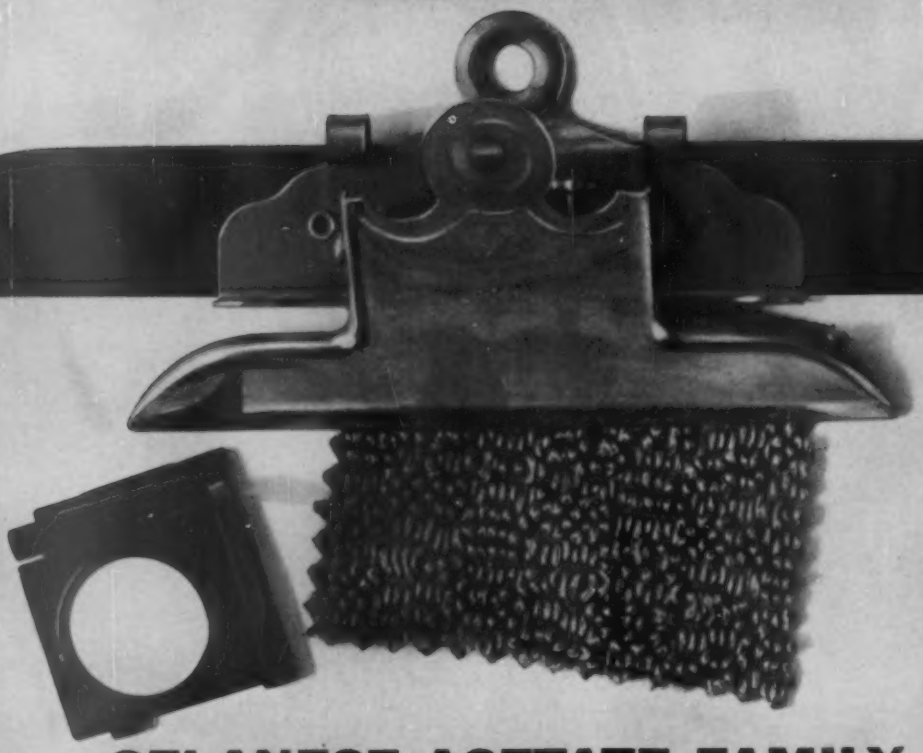

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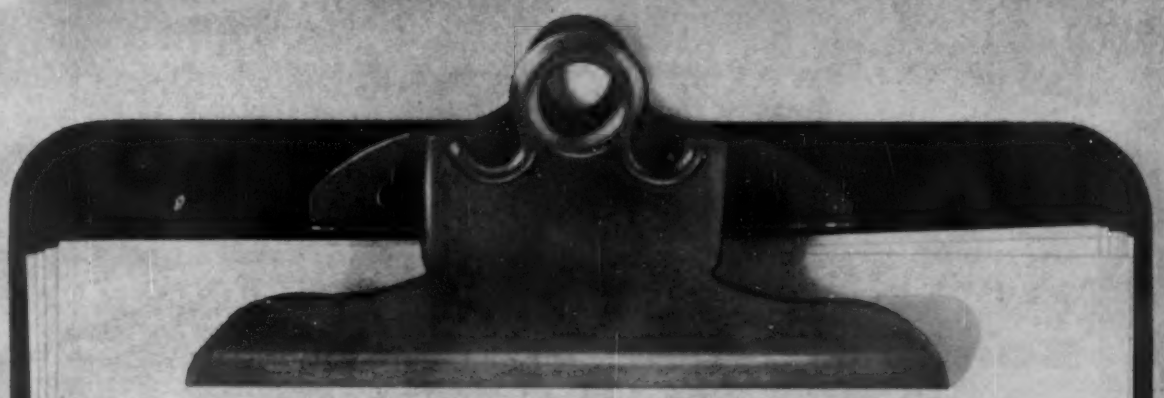

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Cotton Research 1960: What's New, What's Good

So you just couldn't attend the Cotton Research Clinic? Stop worrying. This on-the-scene report will tell you how the experts who were there drew a bead on problems and answers.

Digital Fibrographs. Roving-frame design. Span length. Resin-treated fabrics. These are just a few of the many subjects that came up for analysis in Asheville (N. C.), May 31 to June 2. That was when the National Cotton Council gathered top operating and research men to discuss the latest in research—and the latest findings of research.

Highlights of that 3-day meeting? Here they are—the four big highlights—as TEXTILE WORLD sees them:

1. Sampling and Analyzing

Results of studies with various systems show up as follows:

Fast Analyzing

The Outlook Cotton Trashmeter scans 1,000 lines per frame at a speed of 345 lines per second. Width of scan is 0.004 inch. It requires about three seconds to scan a 4x4-in. sample of cotton as compared with the almost instantaneous scan provided by the Vidicon tube.

Results are indicated on two meters. One indicates fraction of the total area of a sample surface occupied by the dark areas of trash. The other indicates relative number of particles.

A compensating circuit automatically adjusts for imperfections in illumination. The level of reflectance at which the dark particles will be counted is adjusted by a threshold control. Shaping and modifying the signals passing through the threshold level eliminates the effects of background color as well as variations in the level of reflectance provided by the trash particles.

Between area and count readings, a closer correlation exists than one could wish. But through redesigning it seems certain that this can be taken care of in a second instrument. In contrast to results obtained on the first model, in which a Vidicon tube was used, differences in background color no longer influence meter readings.

(*From the paper presented by HARVIN R. SMITH, Cotton Div., U. S. Department of Agriculture.*)

Better Testing

The growing importance of length distribution has sparked new efforts to devise better, quicker methods of testing. The one that has shown greatest progress is the Digital Fibrograph (DFG) and Fibrosampler (DFS).

Objectives in working with the DFG-DFS combination were:

1. To find out how the limitations of the familiar Servo instrument might be eliminated or minimized.
2. To appraise and compare the DFS results with those obtained with the Servo hand-combing and the Suter-Webb sorter array techniques for precision, accuracy, and reproducibility.

Here are the principal findings: The DFS quickly prepares beards for use on the DFG and eliminates most of the personal element of hand combing. A portion of a classer's sample is used. It's important that the surface of the sample represent the bulk of fibers. It's also essential that a "fresh face" be presented to the comb each time a beard is prepared.

The digital instrument can be thought of as the basic Fibrograph changed to read out length and amount of fiber on counters. This read-out feature eliminates the drawing of tangents and associated measurements. The digital instrument positions the board automatically at present locations.

Several length coordinates were studies in this appraisal. The two discussed were the 50% and 3.1% span lengths of cotton fibers.

When the digital instrument is operated continuously by the use of the potentiometer and the counter readings of amount and length are plotted, a Fibrogram is obtained (as with the Servo).

The short-fiber content is derived from digital data in a manner quite like that used with the Servo fibrogram. Two pushbuttons position the beard under the scanning head at 0.45 inch and 0.55 inch. A tangent is computed (from the digital data) to pass through these two points and the percentage of short fibers is derived by the formula:

$$\frac{A_0 - i}{A_0} \times 100$$

To make measurements for short fibers the instrument must be set to begin scanning the beard as close to the combs as possible. Various carriage settings have been explored. When the starting length was as close as 0.125 inch (⅛ inch starting length of the Servo) and a Fibrosampler beard of satisfactory weight for measuring the longer fibers was used, the bulk of very short fibers close to the comb was so heavy that insufficient light was transmitted to the instrument.

On the other hand, if the beard was made light enough to reduce the bulk of the fibers close to the comb so that enough light was transmitted, the total amount of fibers was so reduced that the creation of a satisfactory beard was difficult if not impossible.

Suter-Webb Sorter Array vs. DFS

—Limited data showed a good correlation of DFS 3.1% span length and upper quartile from fiber array. The correlation coefficient for the data is 0.98 with a standard error of 0.02 inch. The 3.1% span length is about 0.10 inch less than the upper quartile length in the narrow range studied.

There was excellent correlation between the short fibers measured by the array and the DFS techniques. The correlation coefficient is 0.94, with a standard error of 2.3% short fibers.

Conclusion: The DFS technique measures parameters of length, which (with only an adjustment of magnitude) are the same as those obtained by the array method.

Servo Hand Combing vs. DFS—The 3.1% span length was chosen as one of the length coordinates for the DFG because it gave a good correlation with the Servo upper-half mean of the Servo over a wide staple range.

A high correlation between the DFS 3.1% span length and the Servo upper half mean was obtained. Correlation coefficient was 0.88, with a standard error of 0.03 inch. The correlation coefficient between the short-fiber results by the two techniques was high—0.86 with a standard error of 2.4% short fibers. Thus it seems that in the staple range studied, the DFS 3.1% span length is the same as the upper-half mean from the Servo for all practical purposes.

Conclusion: The DFG-DFS combination provides a useful, and—in view of the character of commercial cottons today—a timely lab test.

(From the paper presented by LAURA T. HALL, Research Laboratories, The Kendall Co.)

Tighter Control

The mill from which most of the below data came started having trouble as soon as the 1958 Memphis cottons hit the spinning room. As the percentage of 1958 cotton in the mix increased, ends down in spinning increased. In early 1959 the situation became desperate.

The company decided to check the percentage of short fibers in each mix. To speed up short-fiber measurements, it ran a series of experiments with the Servo Fibrograph. The company discovered it was possible to correlate the percentage of fibers shorter than ½ inch (measured by the Servo Fibrograph) with that obtained by the Suter-Webb array method. The coefficient of correlation was 0.93.

Some of the cotton going through the mill was found to measure as high as 25% of fibers shorter than ½ inch. Calculations showed that 14% short fibers in 1 1/16-in. cotton, based on Suter-Webb arrays, was equivalent to 35% coefficient of variation (by experience, the upper limit for good spinning). Therefore 14% was set as the maximum allowable in a mix.

Mixes are controlled—The company set up the following system:

1. Before a mix was laid down, a small sample of cotton from each bale was sent to the lab. There it was blended, and a composite test for short fibers was run on the Servo Fibrograph.

2. If the composite short-fiber percentage was 14% or below, the mix was opened. If it was over 14%, the mix was held out and another mix was substituted.

At the beginning the company often had to replace or reconstitute four or five mixes a day, with some running as high as 21% average short fibers. After about two weeks, results began to show up in fewer ends-down in spinning and in elimination of blowups in the spinning operation.

The next step was to evaluate the short-fiber index of the various lots of cotton in the warehouse. At the start of the 1959-60 cotton season, company extended its short-fiber-measurement program to evaluation of cotton before shipment. Shippers were asked to submit a handful from each bale of 100 bales before the samples were sent up to be approved. Composite samples were made from these pinches, and short fiber tests were run. Sending pinches ahead of time not only saved shipping costs but also speeded up the operation.

Testing is speeded up—In August 1959 the company bought a DFG. Elimination of tangent drawing errors, increased accuracy, and shorter time required per test all favored this new instrument. With the Servo-Fibrograph thoroughly correlated with Suter-Webb arrays in production, the DFG was run in parallel with the Servo for a number of weeks before putting the DFG into the production line. The results of the comparative tests showed an excellent coefficient of correlation—0.985.

The method of short-fiber control just described has now been in use for over a year. In that time, the company has seen how quickly spinning end breakage respond to changes in the percentage of short fibers.

Going further into the method, the company decided to run three different levels: 8% (low), 12% (average), and 15% (high). This test ran for six weeks, covering all three shifts (no Saturdays) for a total of 1,199,303 spindle hours.

The sample with 8% short fibers showed 32.6 breaks per 1,000 spindle hours with a yarn break factor of 1,904. The sample with 12% short fibers showed 52.1 breaks per 1,000 spindle hours, an increase of 59.8%, with a yarn break factor of 1,753, which was a 7.9% decrease in strength from the 8% sample. The sample with 15% short fibers showed 54.8 breaks per 1,000 spindle hours, an increase of 68% over the 8% sample; break factor was 1,620, a decrease of 14.9% from the 8% sample.

(From the paper presented by LINDSAY DEXTER and RICHARD SWEENEY, Pepperell Mfg. Co.)

2. Studying Properties

The complex relationship between fiber properties and with fiber length has a substantial impact on spinning characteristics. Here's what people at the Cotton Clinic heard on this subject, what impressed them.

Length and Strength

Studies of single fibers from length groups above and below the mean length from several cotton types show that some fiber mechanical properties depend on fiber

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length. Major findings are as follows:

• Linear density decreases with fiber length. Breaking tenacity and elastic modulus increase with fiber length.

• Breaking extension and toughness at first increase with length, but later they decrease as fiber length increases.

• Resilience is dependent upon fiber length for only one of the cottons studied.

(*From the paper presented by L. REBENFELD and POLLY K. WAY, Textile Research Institute.*)

Span Lengths

Length of fibers is important for two different reasons:

• In disentangling, orienting, and straightening the fibers (starting from the raw state), it's important to know the shortest distance to which the machines can be adjusted so that few if any fibers will be broken. The staple length or the distance that only 2.5% of the fibers in a roving cross section will span is a good criterion.

• In analyzing product strength, however, you must ask how effectively the fibers bridge or span the fracture zone. This factor is determined primarily by the average length of the fibers or by the length that a large percentage (such as 67%) of the fiber span. In both cases, the length is a distance the fibers will span or bridge.

In the first case it is the distance that only a small fraction will span to prevent breakage. In the second case it is the length that about two-thirds of the fibers will span and contribute their ultimate or breaking strength.

There are two important span lengths needed, therefore, to characterize the length potential of fiber population. Although these lengths can be expressed in terms of other lengths, it would simplify length considerations to make fiber-length measurements in terms of span length. The two span lengths recommended are the 2.5% and 67%.

In Fig. 1 the proportion of fibers that will span the fracture zone or any given distance is readily obtained from the Fibrogram. If the initial height NO of the Fibrogram represents the number of fibers in the cross section of a segment of roving, then the number of these fibers that would span a distance PT is represented by PO. PT is called the span length corresponding to the fraction PO/NO.

The distance OL represents a "secant mean," which for small values of PT comparable to a fracture zone would be only slightly larger than the mean length of the population given by the tangent.

(*From the paper presented by K. L. HERTEL and C. J. CRAVEN, Fiber Research Laboratory, University of Tennessee.*)

New Tests Used

One factor alone explains most of the variance for manufacturing waste, yarn strength, yarn appearance, color of bleached yarn, and color of dyed yarn. When that factor is a part of the classer's grade and staple or of lab measures that are similar to grade and staple, then the results are all about the same.

But when the explanation is related to a factor not included in standards for grade and staple, more tests are needed to provide a better prediction of the quality measure.

For the full range of grades or staples in the standards bales, there's little difference between the amount of variation explained by the classer and that explained by lab measures that are similar to grade and staple. In the annual quality studies, with a considerably restricted range of grades and staples, the explained variation is lower than for the more complete range of the standards. Yet the differences between the variation explained by the classer and by similar lab measures are relatively on the same level.

Department of Agriculture studies made over the years indicate:

1. Waste is less for the same grades in 1958 than in 1946. But over the years the relationship between waste and Shirley Analyzer nonlint has remained nearly constant.

2. Differences in yarn strength between grades have increased gradually since 1946 (with exceptions in 1949 and 1950). This gradual trend is confirmed by the relationships between yarn strength and color. Yarns made from the same lengths are stronger in 1958 than in earlier years, whether measured by classer or laboratory.

3. Appearance of yarn is slightly lower in 1958 than in earlier years —for the same grades and same Micronaire readings, that is.

4. Yarns bleach whiter for higher than for lower grades. With one exception they are on about the same level for all years, whether judged by classing or lab measures.

5. The dyed-yarn index shows a considerable relationship to grade and color, with only slightly different levels between years.

Precise measurements needed— Based on comparative costs of testing it's clear that until more precise measurements can be made by lab instruments, the most practical approach is to use these tests in developing and maintaining standards and as a supplement and aid to grade and staple classification.

The Cotton Division is using this approach more and more in the lab tests for its standardization and classing program. In fact, much of the pioneering in fiber-testing methods originated in the Department's cotton standardization labs as far back as 1927. Even then the Department realized clearly that grade and staple don't fully explain the total contribution of various fiber properties to spinning performance and product quality of cotton.

Based on tests over the past 13 years, grade and staple still provide a good "first approximation" to cotton-quality evaluation. But they do not cover, nor have they ever covered, several of the important fiber properties needed to predict the spinning quality or use value of cotton.

(*From the paper presented by FRANKLIN E. NEWTON, Cotton Div., U.S. Dept. of Agriculture.*)

Short Fibers, Real Trouble

Every mill man knows that short fibers (less than ⅜ inches) lower yarn quality. But until recently nobody had studied their effect on spinning efficiency. Conclusions of this study:

• Effects are extreme and exponential as spindle speed is increased.

• There are strong interactions

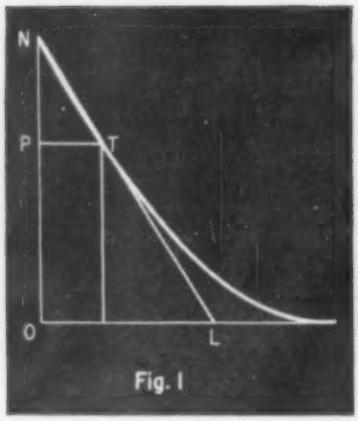

Fig. 1

LENGTH PT is the span length associated with the fraction PO/NO in this Fibrogram.

IDEAL FIBER POPULATION in which all the fibers are 0.75 inch long is shown here. The 2.5% span length is 0.73 inch, and the 67% span is 0.25 inch.

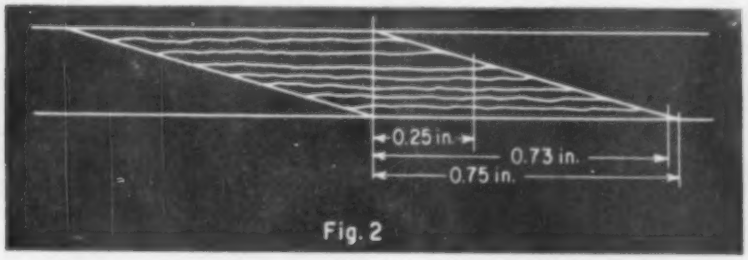

Fig. 2

among short-fiber content, spindle speed, yarn size and twist. That is, high short-fiber content is minimized by increases in yarn size and twist and by decreases in spindle speed.

These facts mean that mill men should consider the short-fiber content of a cotton in allocating it to cotton blends for different types and sizes of yarns.

As an aid in evaluating the spinning performance of cottons containing different percentages of short fibers, a somewhat shortened test procedure was used. Tests show that about 720 spindle hours is long enough to determine the relative spinning efficiency within ± 30% at the 95% confidence level.

Tests show relationship—A series of spinning tests shows that the relationship between spinning efficiency and short-fiber content for 30s and 40s print-cloth yarns is complex and strongly influenced by spindle speed, yarn size, and yarn twist (Table 1, page 123). Increases in short-fiber content, in general, seriously decrease spinning efficiency. When a cotton of a given level of short-fiber content exceeds an ends-down rate of about 20 per 1,000 spindle hours, end breakage increases exponentially with increases in spindle speed.

Because of these complex interactions, the adverse effects of high short-fiber content can be minimized by allocating it to 30s or coarser yarns spun at the twist for maximum strength. Also, for a given size yarn and spindle speed, the lower short-fiber-content cotton should be allocated to filling-twist yarns.

(From the paper presented by JOHN D. TALLANT, LOUIS A. FIORI, HERSCHEL W. LITTLE, and LORRAINE A. LEITZ, Southern Regional Research Laboratory.)

3. Wrinkles and Weaves

Variation in fabric structure can improve tear resistance in some resinated cotton fabrics. But finishing to produce wrinkle-resistant properties usually means lower tear strength. Even so, some small structural changes promise improvements in wash-and-wear cottons.

The above are some conclusions on finishing. For details, read on.

More Tear Strength

If it's lightweight, resin-treated cotton fabrics you're dealing with, subtle changes in fabric geometry can improve tear strength without changing the basic fabric type or adding cost. Sometimes, in fact, variations in fabric structure mean greater tear resistance in a resinated fabric than in its nonresinated counterpart.

But heavyweight cotton doesn't respond as well to similar efforts to improve tear strength. Scouring often has a much more harmful effect on tear strength than resin finishing.

Extensive lab studies were made of one group of 10 commercial cotton fabrics (printcloths, broadcloths, sateens, twills, and chambrays) and a group of 23 experimental cotton fabrics (produced with systematically varied structures) from one lot of Deltapine 15 cotton.

This latter group was subjected to the same preparatory finishing treatment (desized with enzyme, kier boiled, and chemically bleached). The 23 experimental fabrics represented four classes: printcloths, broadcloths, sateen work clothing, and heavyweight twills.

In designing the fabric constructions two approaches (singly and in combination) were followed:

- More mobility of yarns in the plane of the fabric. This can be done by the use of a weave with longer floats; by reducing the fabric's cover factor, usually of the longitudinal yarns; by decreasing number of threads per inch; and by using filling yarns of reverse twist.
- Use of a stronger yarn. This normally implies a coarser yarn.

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Differences acceptable—Significantly 13 of the experimental fabrics exhibited tear strength in the resin-finished samples that was comparable or superior to that of the unresinated control fabrics. Eleven of the 13 were in the lightweight printcloth and broadcloth fabrics; only two in the heavy goods. A standard commercial construction for that class was used as the control.

Here are some observations:

Printcloth

• A fancy weave (2x2 basket) is the most effective design feature for improving tear strength.

• Combining a longer float weave with a decrease in cover factor and heavier filling yarn produces highest tear resistance.

• Utilization of coarser (stronger) filling yarns in the plain-weave samples with either a decrease in filling cover factor or at the same cover factor yields significant improvements in fillingwise resistance to tear.

• The first three observations are valid for the nonresinated and resin-treated samples. But the use of coarse filling yarns with a decreased filling cover factor improves tear strength in the resin-treated sample only. For this case, it would appear that an interaction exists between the lubricating action of the softeners present in the resin bath and the mobility of the fabric structure.

Broadcloth

• Fillingwise tear resistance in all resinated experimental fabrics except one was found to be equal to that of the nonresinated control. This was true despite tensile-strength losses averaging 40%. The single exception, a resin-treated oxford (48s warp and 40s filling, 135x60, off-loom and 139x57 finished), showed 13.5% greater tear strength than the nonresin control.

• Significant improvements in tear strength, before and after resin treatment, showed up in those variations incorporating weaves with longer floats (3/1 twill) or with two ends weaving as one (oxford).

• Substitution of slightly coarser filling yarns with reductions in weight or cover factor or both enhance tear strength across the filling.

Sateen work clothing

• A sateen of 22s warp and 15s filling yarn (120x52 in the off-loom state and 125x50 after resin finishing) was by far the best of the samples studied. It displayed the highest tear strength across the warp and filling yarns. Its warpwise resistance to tear was improved by resin treatment.

• Variations in geometry, which should have improved tear resistance, with one exception failed to do so. Resin finishing, with one exception, reduced tear resistance.

Heavyweight twill

• Tear strength of nonresin fabrics was improved by small geometric changes. But the improvement was almost virtually wiped out by resin treatment. The effect was much more serious in all the heavierweight than in the lightweight fabrics.

• The only variation that resulted in tear strength improvement after resin treatment was a sample that used reverse twist in the filling yarns.

(*From the paper presented by E. JAMES STAVAKRAS, Senior Research Associate, Fabric Research Laboratories.*)

Constructions Studies

Twenty-three cotton fabrics varying in one or more structural parameters were treated with a wrinkle-resistant agent, dimethylol ethyleneurea (DMEU), and also with the agent in a formulated treatment. The effects of the structural variables on crease-recovery angle, tear strength, breaking strength, and resin distribution were studied (Table 2).

Conclusion: Physical properties of fabrics in one direction are not necessarily independent of structural variation in other direction. Because of this interaction, it was necessary to study the directional properties individually.

Variations in fabrics structure were found to have definite directional influence on the crease-recovery angles of fabrics with wrinkle-resistant treatments. Although untreated fabrics of various structures were found to have a wide spread in crease-recovery angle, a wrinkle-resistant treatment tends to narrow this spread and bring each fabric fairly close to the crease-recovery angle.

Fancy weaves increase strength—Tearing strengths of wrinkle-resistant fabrics can be improved by using fancy weaves rather than plain weaves. The oxford and 2x2 basket weaves produce fabrics with the best tearing-strength properties of those tested. These results agree with a previous report that any variation that will improve the yarn mobility will produce fabrics with greater tearing strengths.

Use of yarns of lower yarn number also improves tearing-strength properties. But this improvement is accompanied by an increase in weight and changes in cover factor.

Variations in fabric structure do not have much effect on breaking strength; although it appears that in some fabrics coarse yarns retain more strength after resin treatment than fine yarns.

Variations in twist multiplier have an effect on resin distribution between warp and filling yarns of wrinkle-resistant fabrics.

(*From the paper presented by RICHARD L. ARCENEAUX, J. DAVID REID, and E. FRED SCHULTZ, JR., Southern Regional Research Laboratory.*)

4. New Textile Machines

Several machine builders and research technologists reported on important recent developments. Their papers covered an automatic draft control system for the draw frame, recent developments in roving-frame design, a top-roll suspension system for spinning, and new developments in roving package winding.

Electronic sliver control—Paul B. West (Research and Development Center, Saco-Lowell Shops) described the design, construction, and performance of the new Saco-Lowell Uster Versa-Matic ADC drawing frame that employs electronics to keep sliver uniform.

As the stock passes through the drafting area of the Automatic Draft Control system, an electric transducer of the capacitance type produces a signal in proportion to weight per unit length. This signal controls front-roll speed within

± 20% of the mean, and weight variation can be corrected within that range. Reductions in short-term variation can be made from a normal 2.5 to 3.5% CV down to 1.5 to 2.0% CV.

Roving frames now better—Carl D. Brandt (Whitin Machine Works) discussed recent improvements in roving-frame design and described the development and operation of the 14x7 Model P frame that has a flyer speed up to 1,200 rpm. Maximum full-bobbin weight is 105 ounces. In making 1-hk. roving, production is 1.65 pounds per hour per spindle, which means that one 96-spindle frame can keep 5,000 spindles on 30s yarn in continuous production.

New drafting system—Burrell C. Cole (Cole Engineering Co.) told of the step-by-step development of the Cole Phantom drafting system and cited results of ends-down and breaking-strength tests made in a number of mills. The system eliminates cradles, long aprons, tension pulleys, suspension bars, nebs, and overarms. Reports from several mills indicate excellent results in all spinning operations.

Higher-volume packages—G. G. Fornes (Institute of Textile Technology) described development of a roving-frame variable-pitch builder screw that enlarges the profile shape of the roving bobbin to permit production of a high-volume package with a high-tension wind. Overruns are not increased. The device consists essentially of a variable pitch, single-groove, helical, builder screw actuating follower pins in the builder jaws that control the shortening of successive layers as they are wound on the package.

The Institute also has perfected a roving winding tension control that starts the winding of the bobbin with 10 to 25% fewer teeth in the tension gear and moves the belt along the cones in increments that are constantly increasing. The effect is very similar to using a large family of cones of variable shapes and sizes.

The two mechanisms used together permit the production of 20 to 60% heavier roving packages, give higher quality packages with fewer overruns and tension breaks, and produce more stable packages for handling. Cost can be amortized in one year.

TABLE 1.

Selected Properties of Yarns Spun at Specified Twists and Spindle Speeds from Acala 44 Cotton

Yarn number (single)	Twist multiplier	Spindle speed (1,000 rpm.)	Single Strand Tenacity Grams tex	Elongation (%)	Uniformity[1] (% CV)	Yarn appearance (grade)
				4.5% Short Fibers		
30s	3.75	9.0	15.2	6.62	20.1	B−
		12.5	14.7	5.80	19.9	B−
	4.40	9.0	16.1	7.15	20.7	B−
		12.5	16.0	6.12	20.4	B−
40s	3.75	9.0	14.0	6.20	21.7	B−
		12.5	14.1	5.40	21.1	B−
	4.40	9.0	15.2	6.62	21.7	C+
		12.5	14.8	5.52	22.2	B−
				9% Short Fibers		
30s	3.75	9.0	12.2	6.40	22.8	D+
		12.0	12.0	5.52	22.5	D+
	4.40	9.0	13.5	6.95	23.6	C−
		12.0	13.5	6.35	23.4	D+
40s	3.75	9.0	11.2	5.86	23.4	D+
		10.0	11.3	5.80	22.9	D+
	4.40	9.0	12.4	6.20	24.6	D+
		12.0	12.3	5.66	26.0	D+
				15% Short Fibers		
30s	3.75	9.5	10.5	5.80	27.8	D
	4.40	9.0	11.9	6.50	27.6	D
		12.5	11.6	5.75	27.8	D
40s	3.75	9.0		Unspinnable		
	4.40	9.0	10.6	5.73		D
		10.0	10.7	5.34	29.7[2]	D

[1] Uster tester with quadratic integrator at 8 yds. per min.
[2] Over 30%, the upper limit of instrument

SHORT-FIBER CONTENT affects yarn uniformity, tenacity, and appearance. Spindle speed appears to have little effect on these properties.

TABLE 2.

Effect of Weave on Fabric Crease-Recovery Angle, Tearing Strength, and Breaking

Weave	Treatment	Crease-Recovery Angle (Degree) Warp	Crease-Recovery Angle (Degree) Filling	Tearing Strength (Grams) Warp	Tearing Strength (Grams) Filling	Breaking Strength (Pounds) Warp	Breaking Strength (Pounds) Filling
	O	106	98	1,047	918	42.8	40.0
Plain	A	147	147	430	302	26.6	23.1
	B	157	164	537	316	25.9	22.0
	O	94	99	1,164	1,349	39.7	35.3
2/1 Twill	A	148	144	463	321	26.7	21.8
	B	158	158	746	557	24.6	21.6
	O	101	107	1,778	1,845	39.9	36.0
2/2 Twill	A	150	141	611	398	25.7	19.5
	B	159	159	946	746	23.0	19.3
	O	109	90	1,560	1,633	40.5	37.1
3/1 Twill	A	151	148	575	368	24.8	19.4
	B	165	163	871	746	23.2	19.1
	O	109	118	2,630	3,981	40.9	28.4
2x2 Basket	A	146	144	1,054	611	24.5	20.0
	B	157	155	2,009	1,479	25.9	18.3
	O	119	111	1,919	1,762	41.1	41.0
Oxford	A	149	144	813	404	26.3	22.2
	B	157	158	1,306	753	24.3	21.2

O—untreated; A—DMEU; B—formulated.

VARIATIONS IN WEAVE have a pronounced effect on the tear strength of fabrics. For example, the 2 x 2 basket weave with formulated treatment was stronger than any other treated fabric. The 2/2 twills were as strong as the 3/1 twills and stronger than the 2/1 twills.

POINTERS FOR SUPERVISORS

When You Boss A Boss

Dealing with a man two or three steps below you can be tricky work. Here's word from an expert on the best way to proceed

By S. G. WILLIAMS,
Management Consultant, New York City

IMAGINE you're faced with a man whose nose is a bit out of joint. He stands before you ready to make a specific request. Only trouble is, he usually reports to one of your subordinates. Now he's about to by-pass his boss. What to do? Perhaps you say something like this:

"Look, Charley, let's do this the right way. Talk it over with your boss. If he doesn't do what you think ought to be done, ask him to come on up here with you, and the three of us will sit down together."

If that's what you say under similar circumstances, you're on the right track. But even if your impulse is right, it will pay you to review this tricky aspect of your job. No doubt about it—there's no place easier to slip up than in dealing with people whom your subordinates boss.

The Clear Line

Part of the difficulty is that everybody down the line in your department or section does, in a real sense, work for you. You are accountable for the total performance of all the people there. It might be nice if you could supervise every one of them. But you can't.

So what have you done?

You have delegated the responsibility to your own immediate subordinates. You have divided the complete operation into logical, efficient parts. You've put Charlie in charge of one part, Jack in charge of another, Sam in charge of another, until each smaller group of people, machines and processes has its own particular boss. You've done this because it was necessary.

Forget the Work Below

Forget in a special, specific sense. That work, you see, is no longer your concern. It's Charlie's or Jack's or Sam's. Put it out of your mind. Of course, there will be occasions when you'll want to have it very much in mind. But in your everyday activity, what you should not be thinking about is the work that's in the hands of your own immediate subordinates. That's for them to be thinking about, handling, getting done. It's their responsibility. Let them do it. Whether or not you can do this successfully depends on the answer to a question:

Can You Delegate?

When you delegate, you hand over a part of your work to someone who reports to you. Of course, you keep certain controls for yourself. It's the type and degree of control that makes the difference.

Some supervisors never do delegate. They only assign people to help them as they continue to do the thinking, planning, deciding, and executing.

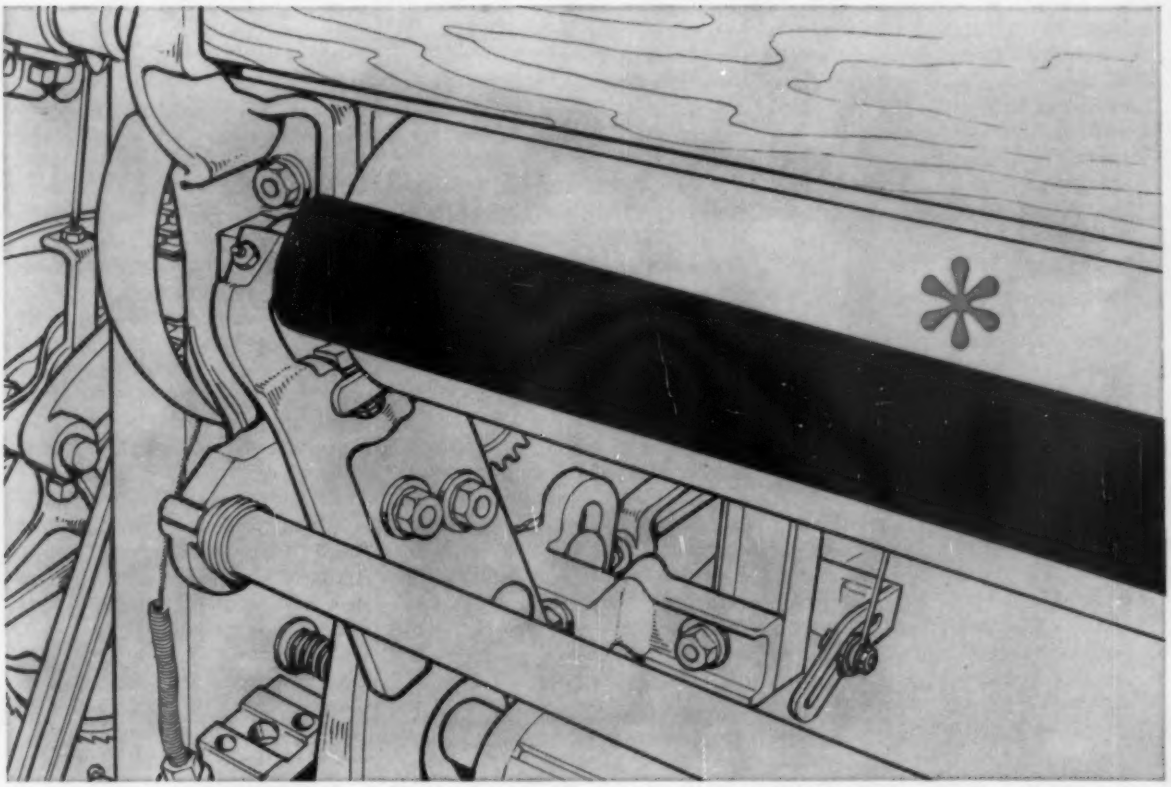
Others are "yo-yo" delegaters. You know this popular brand of managing. Yo-yo delegaters hand the job to a subordinate, but they hold on to the string and constantly bring both job and subordinate back into their own hands. They're completely in control, even though they've made a pretense of delegating.

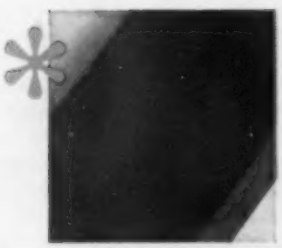
Next up the line of managing skill is the "over-the-shoulder" or "tax-collector" delegater. He lets you do it yourself. But he's watching every single move, checking every figure, so he can jump in with his own decisions or corrections on a moment's notice.

A third familiar specimen is the "daily" delegater. He leaves you alone all day—until five o'clock. Then, just as you're ready to go home, he wants a blow-by-blow account. He wants the prerogative of revising all the executing you've done.

Still a different type of delegater is one who also doesn't really delegate at all, but in the opposite way from the first group of nondelegaters depicted above. He washes his

Cork-and-rubber press roll covering reduces fabric creasing on looms





You can practically eliminate the most common cause of fabric creasing—uneven maintenance of take-up roll tension—by switching to this new cork-and-sponged-rubber press roll covering. It's Armstrong Accotex DK-149.

This resilient material has a high friction surface. It holds the fabric snugly against the full width of the take-up roll, maintaining tension selvage to selvage. Despite this firm grip, DK-149 won't mark even the finest fabrics.

DK-149 can't pack down or develop high spots. It won't let the cloth slip or run unevenly and thus allow creases to develop. On many looms, DK-149 has run without replacement for more than three years.

Try this unique press roll covering on several of your looms. It comes in handy ribbon form for quick, easy application to press rolls. Your Armstrong man will help you arrange the test. Armstrong Cork Company, 6907 Dauphin St., Lancaster, Pennsylvania.

Armstrong LOOM SUPPLIES

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hands of any future connection with the matter after he's handed it over. In his mind, it becomes none of his business henceforth. This is commonly called abdication. It's inappropriate because it's contrary to the fact that the boss is accountable for all the levels of subordinates under him.

Delegation That Works

How do you delegate to your immediate subordinates so that they have the responsibility and the challenge? How do you delegate so that you have sufficient control? How do you keep out of the hair of your subordinates?

Here are three keys to delegating successfully. You may not heed all three, but you'll seldom make the grade without at least two of them:

1. Exceptions—You set up a body of objectives and rules for reaching those objectives. You instruct your subordinates to call you in only when there's an exception to the rules—or some need to make an exception. A helpful example was overheard in a discussion between a New England superintendent and his weaving overseer:

"Ralph, the vacation set-up is pretty specific, and all my people are scheduled and ready to go—except one, Geraldine. Well, she wants very much to take a different time because her kids are going off to camp. I could arrange it. But what about the rules?"

"How long has she been with us?" you ask.

"Eleven years, I think."

"She's a good worker? Good attendance record?"

"One of the best. For a woman with kids, her attendance is tops."

"All right," you say. "If you can arrange it, I say let her go when it's best for her."

2. Troubles—This is the obvious situation. When your subordinate has operational difficulties—something or someone he can't handle—then he turns to you. This, of course, is exactly what you want him to do. It's one of the main reasons you're there.

3. Scheduled, regular reports—Here is the best control for all standard parts of the supervisory job you have delegated to Charlie, Jack and Sam. No doubt you already have a number of these controls—budget reports, production reports, attendance, safety, turnover, overtime, and waste, each due at a regular, specific time.

For special projects or any other non-standard activities you delegate, you may want progress reports, to be made whenever a certain point is reached:

"Once you get the figures together, Sam, let's sit down again and see how the whole program looks to us."

Worries You Keep

While you put your own men in charge of the people two levels down, you do still have some responsibilities for those subordinates of your subordinates. But it's important to remember that you fulfill those responsibilities not directly, but through your immediate crew.

One duty you inevitably retain is to see that each of them has opportunities to grow, to improve, to realize the fullest use of his individual talents and capacities. If you don't, you're not only neglecting a basic human need, but you are failing to take best advantage of your company's most valuable resource. Approach this by:

Developing Developers

How you help Charlie, Jack, and Sam to grow on their jobs will have much to do with their motivation and skill at stimulating growth in their own workers. There are students of management who say there is the one truly reliable mark of a manager: his ability to develop people so that they, in turn, develop other people.

How do you develop developers? A regular appraisal and development program, naturally, makes this task easier. Yet, without such a program, you have many steps you can take, casually and normally, such as these:

. . . "Jack, I've noticed that young Bert is smart as a whip. What are we doing to help him better himself so he can give us more of the benefit of his intelligence?"

"What did you have in mind?"

"Well, you might give him some extra assignments—special project types of things, you know. Or rotate him around a bit, let him try his hand at several of the jobs.

"Why don't you tell him we expect great things from him. Ask him if he's thought of studying at night school. That might encourage him to do more on his own."

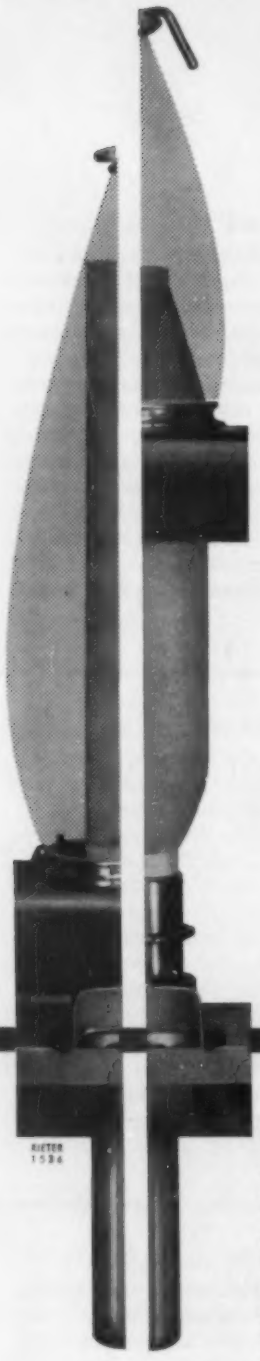
Insuring Taut Management

Another duty you can't escape is that of seeing that your subordinates (1) treat all their people with impartiality; (2) keep close watch on the machine guards, housekeeping, and other safety factors; and (3) apply the working rules impartially and uniformly throughout all the sections within your control.

A third duty is to maintain your friendly speaking terms with the workers. Walk through the mill. Say hello. Stop and chat with them—about themselves, their families, their hobbies. Just make sure your questions are sincerely motivated. Your employees can spot a phony question instantly.

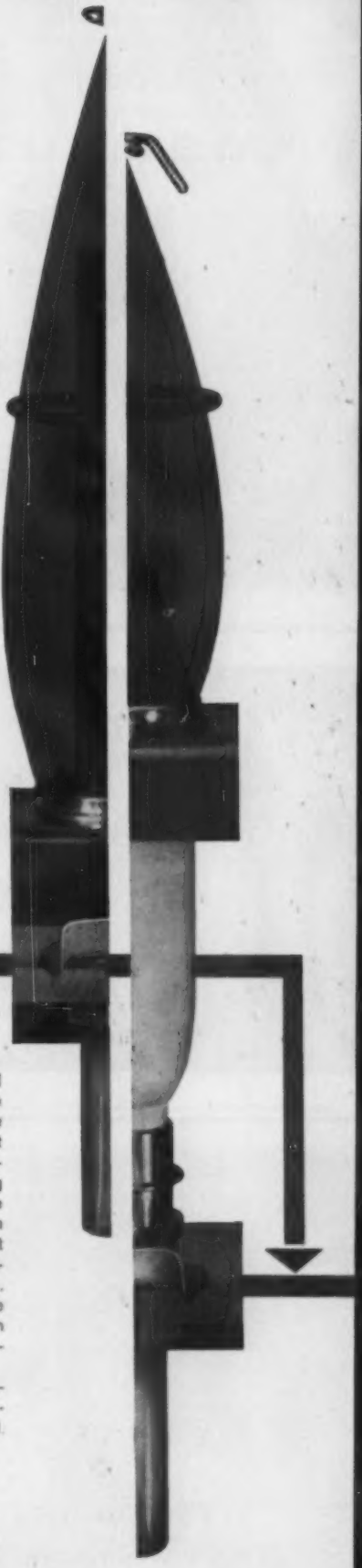
Attention to these simple suggestions can make you a successful manager when you boss a boss.

G 4



Fixed spindle rail
= irregular balloon, uneven yarn tension

Movable spindle rail
= practically constant balloon, compensated yarn tension



Advantages of Rieter's spinning frame G 4

Rieter's ring spinning frame G 4 is the most economical solution for large cops and the whole count range in cotton yarn spinning. The outstanding feature of this machine is the movable spindle rail, which ensures a practically constant balloon during the formation of the cop and thereby a compensated yarn tension, and permits maximum operating speeds. The automatic underwinding and stopping device simplifies operation and enables cops to be produced with uniform yarn length. The guide saddle drafting arrangement with double aprons and pneumatic weighting of the ball-bearing top rollers supplies better yarn with higher drafts. The pneumatic weighting system has the advantage that the pressure can be adapted quickly to all requirements which are encountered. On request the fluted rollers are also supplied with ball bearings.
Rieter's ring spinning frame G 4 meets the highest requirements and greatly contributes towards improving the productivity and thereby the competitive ability of a spinning mill.

Please ask for our special pamphlet G 4.

Rieter

Rieter Machine Works Ltd., Winterthur Switzerland

COST CUTTERS

One Machine Does Work of Two

When the hosiery preboarding facilities of Diamond Mills Corp., High Point, N. C., became strained from overproduction, management men studied modern equipment at the mill to see how production could be expanded.

The result is an arrangement that lets two operators work together on one machine. Now the output from each boarding machine is doubled.

Hosiery dyeing at Diamond is 95% on rotary machines and 5% on Paramount boards. Acetate dyes are used, and a continuous record is set up of the dyeing cycle and dye formula for each dye lot.

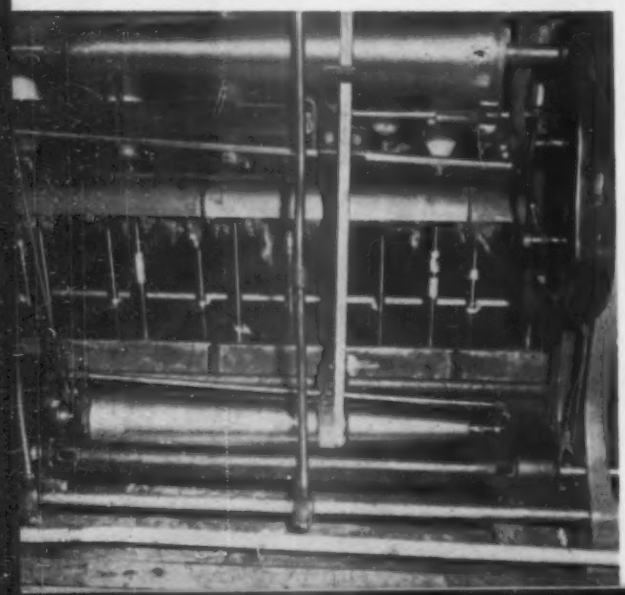
Colors are checked closely. There's one check at the wet tube and a second check at the final boarding.

Strapper Cuts Packing Costs

One man now handles the strapping, weighing, and stenciling of all cartons of finished cloth produced by Indian Head Mills, Inc., Cheraw, S. C. An Acme F-1 semiautomatic strapping machine made by Acme Steel Co. (135th St. & Perry Ave., Chicago 27, Ill.) has cut Indian Head's labor bill by 8 to 16 hours a day.

The 275-lb. test containers move from the packing area on roller conveyors. Then a powered conveyor picks them up and lifts them to the level of the strapping machine.

The semiautomatic strapper feeds strap three quarters of the way around the case. When the operator pushes a button, the machine tightens the strap, spot welds it, and cuts it off in a single operation.



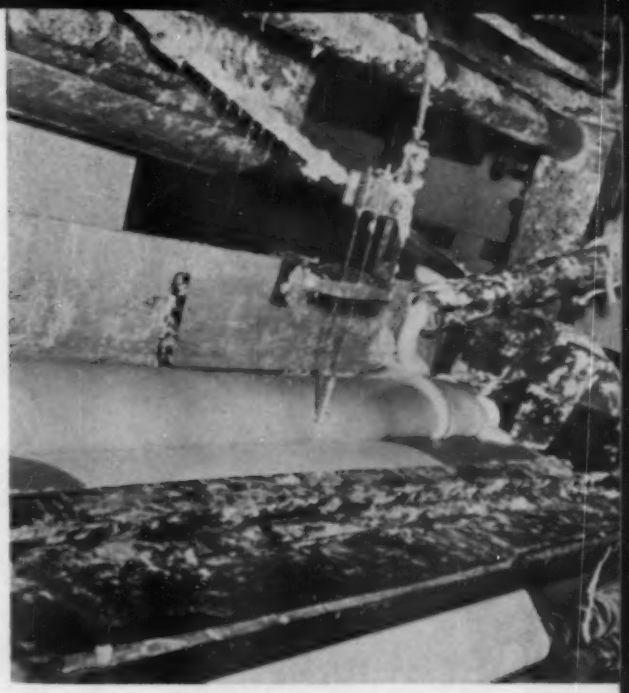
If Your Cone Belts Are Slipping . . .

Take a lesson from Startex Mills, Spartanburg, S. C. When this mill installed its 12x6½ roving frames equipped with ordinary composition cone belts, roving-frame operation was pretty ordinary in that the belts tended to stretch and slip.

It was necessary to change tension two or three times per 8-hr. shift and often between 1½-hr. doffs. Ends down ran from 5 to 6 per frame hour at 707-rpm. spindle speed and 181-rpm. front-roll speed. Evenness was not good.

Startex licked this problem by installing an Extremultus cone belt composed of thin layers of fabric, polymer, and chrome leather. The material has an extremely high coefficient of friction and practically no stretch.

Results: No tension-gear changes between doffs, ends down cut in half, and more even roving from start to finish of each bobbin.

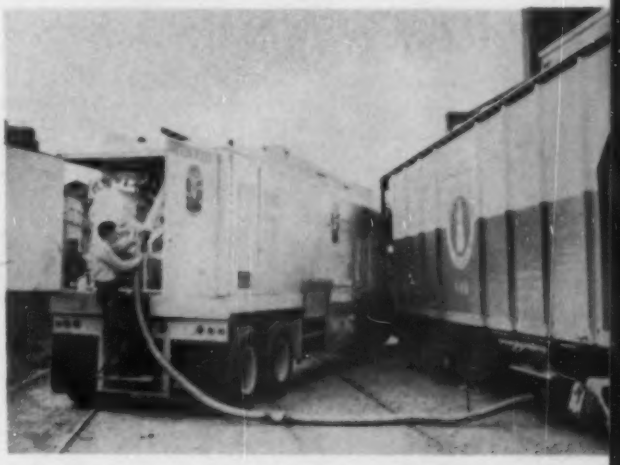


Probes Maintain Starch Level

Fulton Cotton Mills, Atlanta, Ga., solved a level-control problem on its back-starching ranges with a simple device that eliminates the need for constant operator attention to starch levels.

Starch consumption is rapid at 100 yards per minute or better. So the operator had to be alert.

The automatic control is actuated by two probes placed in such a way that when both are covered by starch, no starch is fed. As the starch is consumed, one probe is freed, and the electric circuit that had been closed by the moist starch breaks. The break actuates the starch-feed valve. Starch flows until the probes are both covered with starch. The detector circuit is then re-established, and starch flow stops.



Air Cuts Manual Handling

A pneumatic bulk-starch-handling system at Springs Cotton Mills, Lancaster, S. C., cuts down on manual handling, reduces waste starch, and improves plant cleanliness. Bonus benefit: The price of bulk starch is 22¢ per 100 pound below the bagged price.

Seven Springs mills within a 30-mile radius make use of the new system—Airveyor Bulk Transport (Fuller Co., Catasauqua, Pa.). System unloads 25,000 pounds of starch from railway hopper cars in 35 to 45 minutes.

System is built around a pneumatic bulk-handling trailer that shuttles between the railroad siding at Lancaster and the seven mills. The trailer's crew of two men is the entire labor force used to bring starch to all of the mills.

Conveyor Ends Cloth Handling

Over-the-counter put-up department at Dan River Mills, Inc., Danville, Va., gets a strong boost from this Alvey conveyor that takes packaged goods from the department directly to shipping or to storage without further handling.

This department is now completely self-sufficient with invoice operation right in the put-up room.

Shipments are made up from these invoices. Packers put goods in telescope containers or regular slotted boxes. Case numbers are signed and printed in sequence. A prepunched card bears the case number. Clerk attaches card to each case to show the location of the case in storage.

These fabrics are an important part of Dan River's production capacity. Most goods are double-and-rolled bolts of 25- to 30-yd. lengths.

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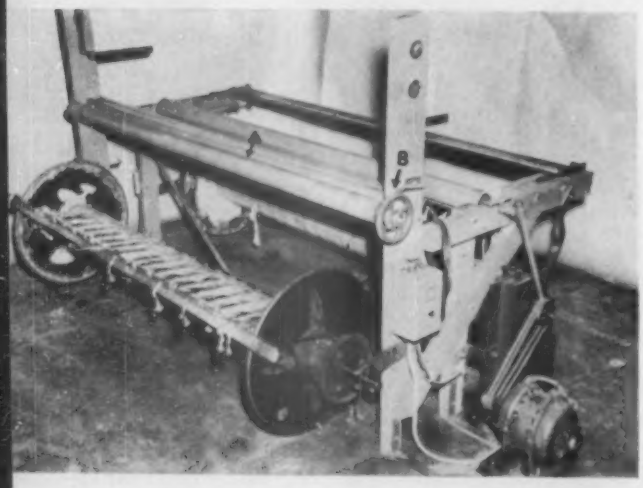
COST CUTTERS

. . . *Begins on page* 128



Tying and Beaming Samples—

Used to be quite a problem at Leach Textiles Ltd., Huntington, Que. From six to eight styles with different shades are made in a blanket weave. It used to be necessary to draw each style separately.

To eliminate this tedious operation, the mill designed the frame in the photo and built it so that all styles can be tied together and put on one beam.

Arrangement requires only one draw-in, one set of drop wires, and one loom beam. The frame also can be used to tie to a loom harness. Two beams are used at warping. One holds one sample and one lease. The other holds all the other samples beamed on top of each other with leases at each end. Drop wires are put on when the beam is at the drawing-in frame. When the frame is used to tie loom harnesses, hooks are inserted in wooden roller **A;** ratchet wheel **B** keeps yarn tight.

Red Light Stops Waste

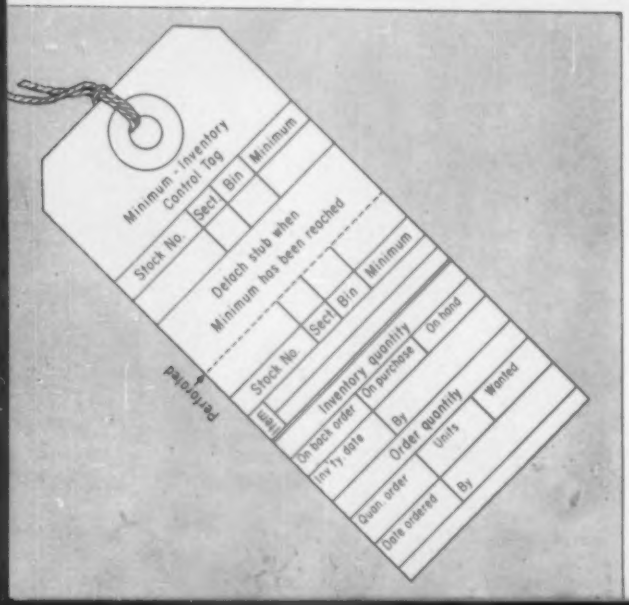
Clinton Cotton Mills, Clinton, S. C., not only wanted the stability of the standard two-electrode control system on its slasher size boxes, but it wanted to reduce operating speed when the solution level in its size boxes dropped below normal.

The size boxes at Clinton hold a 4-minute supply. And when the solution level drops even a small amount, the slasher when operating at normal speed soon exhausts the supply. Result: unsized yarn.

But the mill dreamed up a control system using Minneapolis-Honeywell Regulator Co. equipment.

A series R182B electric relay picks up the signal from the top electrode and operates a R04000A electric-pneumatic relay to stop overflowing.

The lower electrode energizes a switch through a second R182B relay to reduce slasher speed and to flash a red light to warn the operator.



No More Record Posting

Neisler Mills Div., Massachusetts Mohair Plush Co., Inc. (Kings Mt., N. C.) has cut paper-shuffling time for requisitioning supplies 30% by developing a minimum-inventory control tag that (1) eliminates posting of disbursements, (2) flags the reorder point, and (3) permits a 30% reduction in minimum quantities kept on hand.

Ordering-point quantities of supplies are packaged, and the tag is attached after it has been filled in above the "inventory quantity" line.

When the rest of the stock has been consumed, the parcel is broken and the bottom stub of the tag is removed and filled in.

Order quantity is then requisitioned and posted on the stub. The stub, placed in an open-order file, is removed when replenishment is received; the upper portion of the tag is destroyed when a new minimum package is placed in the bin.

Bolster Briefs

by Ron Kinney

Manager, SKF Textile Sales

The recent American Textile Machinery Exhibition at Atlantic City was one of the industry's best—according to Ron Kinney, who has attended almost every textile show in the U. S. during the past twelve years. This month, Ron takes time out to comment on the Exhibition and to report on SKF's participation.

How do you think the Atlantic City Exhibition compared with the many others you've seen? What made the biggest impression on you?

It was easily the best show I've ever attended. The thing that really impressed me was the general enthusiasm, from start to finish. Everyone – top management, foremen, overseers, and suppliers like myself—came expecting to see new products, processes and ideas that would help improve quality and lower costs. And we weren't disappointed.

How did the manufacturers' displays at the Exhibition compare with those at shows in recent years?

I understand there were more than 400 exhibitors on the floor. Nearly all of them had something new to show, whether a product or a process. No one, I'm sure, left the show without taking some valuable new ideas with him.

Many of the displays were unique and well worth seeing, even if you weren't in the market for the the product featured. These exhibits certainly provide some valuable ideas about displaying products.

At other shows, I've heard the comment that manufacturers were simply showing "the same old stuff." This *wasn't* true of the Atlantic City Exhibition. It has been reported that a large number of sales were made on the floor.

What did SKF show at the Exhibition? How were your products received?

Well, let's take those questions in order.

We unveiled our new PK Series Pendulum Weighting Arm Drafting System equipped with new Draftrite Roller Bearing Top Rolls. These products were installed on four SKF Spintesters which were in actual operation, demonstrating high-quality center-suspension drafting of cotton, synthetic, woolen and worsted yarns.

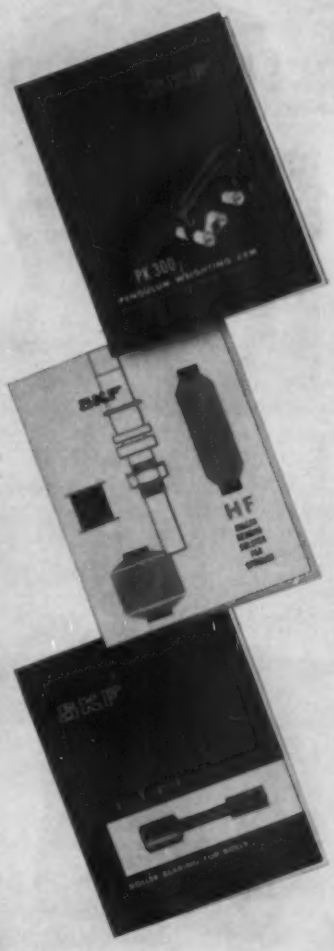
We also demonstrated our new HF High Speed Roller Bearing Bolster, which is designed for cotton spinning, and our HZ Roller Bearing Bolster for heavy-package, high-speed twisting.

There was definitely a great deal of interest shown in these products--- even more than we expected. As a matter of fact, interest was so great that we've arranged to print additional copies of our literature on the PK Series Pendulum Weighting Arm, Draftrite Roller Bearing Top Roll, and the HF Roller Bearing Bolster for spindles. The three booklets are shown in the one-third page SKF ad at right. For a copy of any one of them, or all three, just call or write to me. I'm sure you'll find each of them helpful and of value.

6009

GOT A PROBLEM?
SEND YOUR QUESTION TO
"BOLSTER BRIEFS".
c/o SKF INDUSTRIES, INC.
P. O. Box 6731,
Philadelphia 32, Pennsylvania

You saw them at the show—now see how these new SKF products can save time and money for you!

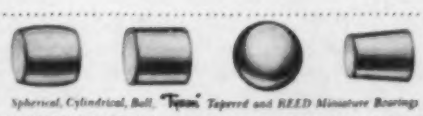


A: NEW SKF PK SERIES PENDULUM WEIGHTING ARM. Ensure better results in spinning cotton, synthetic, woolen and worsted yarns!

B: NEW SKF HF—HZ ROLLER BEARING BOLSTERS. Provide more profitable production of quality yarn—because of their smooth acceleration, vibration-free operation and precision plumbing.

C: DRAFTRITE ROLLER BEARING TOP ROLL. Improve quality and evenness of yarn—reduces maintenance to a minimum.

Call GArfield 6-6400 or write:
SKF Textile Division—Philadelphia, Pa.
In Charlotte, N. C., call JAckson 3-6232



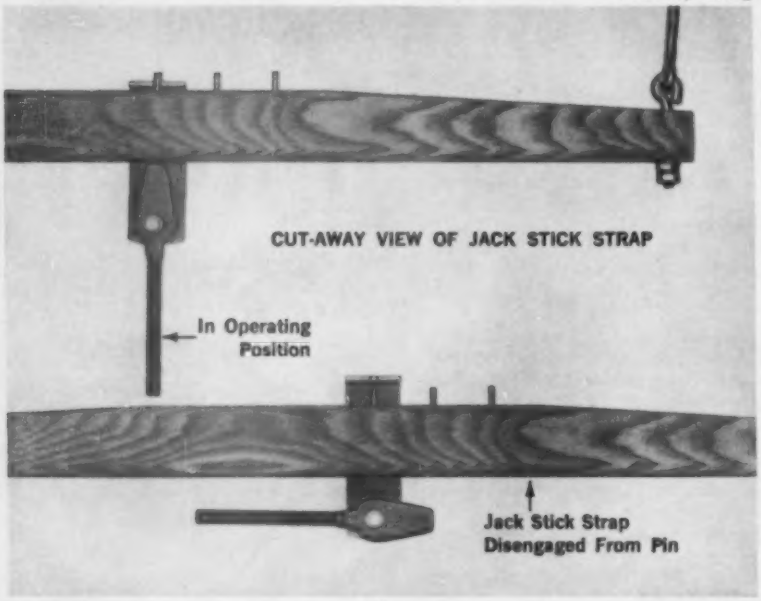
Spherical, Cylindrical, Ball, "Thrust," Tapered and REED Miniature Bearings

EVERY TYPE—EVERY USE
SKF
SKF INDUSTRIES, INC. PHILADELPHIA 32, PA.

DRAPER BRIEFS
NEWS OF INTEREST IN WEAVING

"SELECTIVE" TYPE JACK STICKS* SAVE TIME... SAVE MONEY

*Patent pending



A new Jack Stick (Selective) construction, with Positive Pull-down parts, is available for most Draper loom models – up to six harnesses with cams on auxiliary shaft, or four harnesses with cams on cam shaft.

These Jack Sticks have pins driven into the top edge, and a hole in the Jack Stick Strap fits over any one of these pins. The Jack Stick Strap is movable and can be located on the pin which matches one of the sequence of treadle positions. The Jack Stick can be reversed, end for end, to meet maximum cam conditions. The Turnbuckle End (Top) has an elongated cam which prevents the Jack Stick Strap from jumping off the pin during operation and, when the turnbuckle assembly is moved parallel with the Jack Stick, permits moving the Jack Stick Strap to any one of the required positions.

Since one Jack Stick pattern number suffices for the varying number of harnesses used on a loom, the total number of Jack Sticks which a mill must stock is reduced.

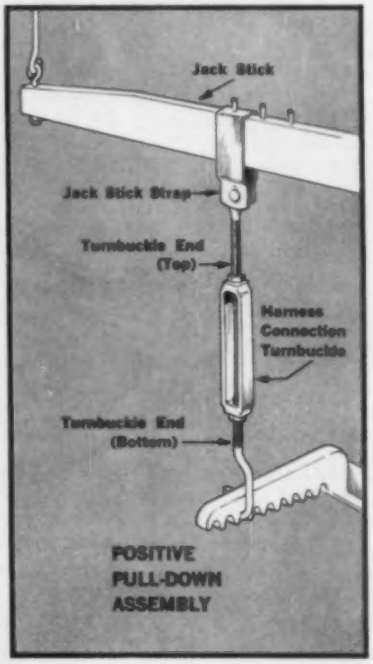
The Jack Stick Strap can be removed from the Jack Stick, permitting a mill to use only one Jack Stick pattern number for any depth of harness frame. This contributes to a further reduction in the quantity of Jack Sticks a mill must keep on hand.

Wear on Jack Sticks is reduced by the lengthened Jack Stick Strap which locates the Turnbuckle farther from the Jack Stick and, in most cases, prevents the Turnbuckle from coming up between adjacent Jack Sticks.

In addition, the eye for the Jack Hook gives increased clearance to further reduce Jack Stick wear.

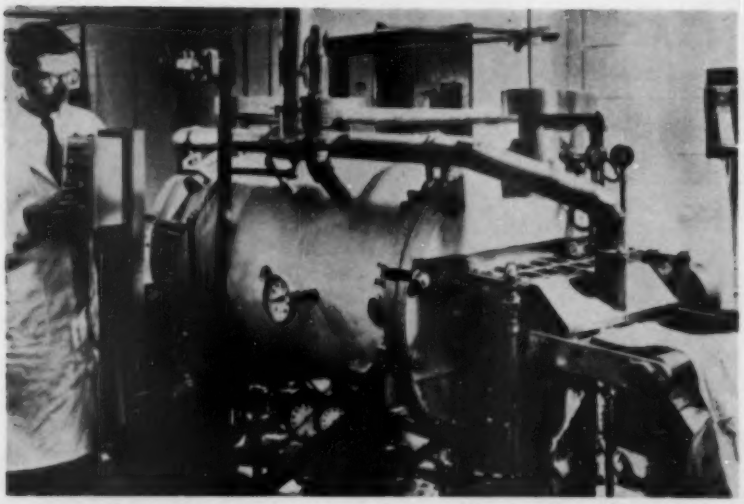
New Jack Sticks (Selective) offer these advantages:

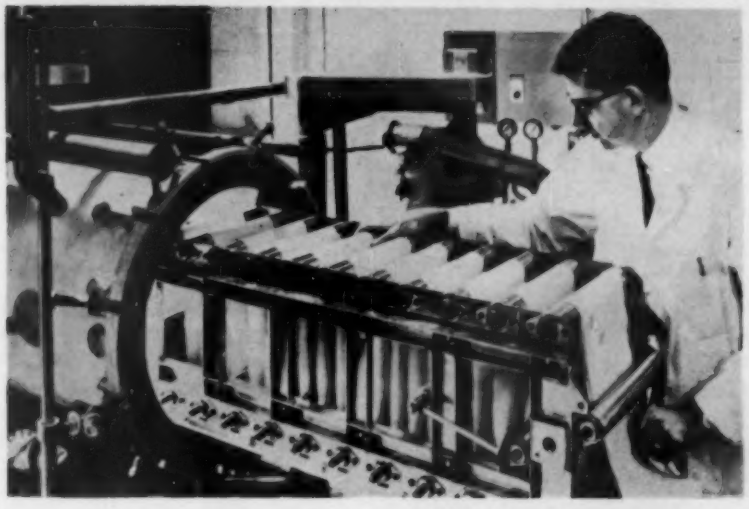
1. Reduce quantity of Jack Sticks mill must order.
2. Simplify stock room and ordering records.
3. Versatility – only one pattern number required for all treadle positions and/or depth of harness frames.
4. Jack Sticks stronger at center section.
5. Reduce wear on Jack Sticks from Turnbuckle and Jack Hook.
6. Easy assembly, disassembly or relocating of Jack Strap. Jack Sticks of different lengths are interchangeable with the Jack Strap assembly.



Equipment and Supply News

For more information on any of these items, circle appropriate number on the Reader Service Card, next to back cover.





New Continuous Bleaching Really Comes of Age

Continuous hydrogen-peroxide pressure-bleaching of open-width goods at high speed and using 25 pounds per square inch pressure at 265 F. has been made possible by cooperation between the James Hunter Machine Co. and the Becco Chemical Div. of Food Machinery & Chemical Corp. The former makes the machine and has designed and patented the "Pressure-Lok" seal at the entrance and exit from the pressure chamber. The latter has developed the "Super-Steam" procedures and has worked with the prototype at its research and development center, processing a variety of cotton fabrics. At the high temperature, the bleaching reaction of hydrogen peroxide is accelerated so that a satisfactory whiteness is obtained with a 60-sec. pass.

The fabric is carried through on a series of rollers that keep it taut and prevent rubbing against the machine or against another part of the fabric. This prevents creasing, staining, or marking.

Specially designed seal rolls at entrance and exit permit high pressures in the chamber without undue loss of steam. The pressure unit can be used with existing washers, squeezers, caustic saturators, and peroxide saturators. It takes the place of the J-box.

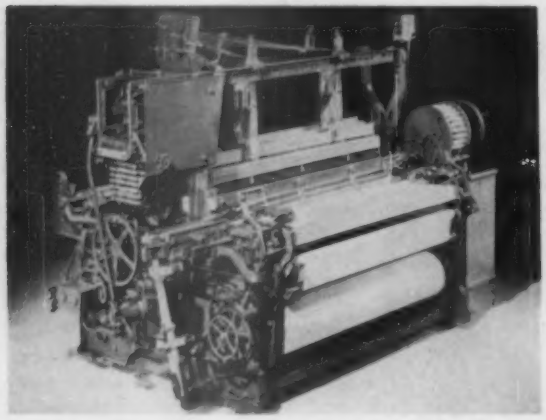
The three basic bleaching purposes—(1) whitening, (2) removing noncellulosic substances, and (3) improving absorbency for functional use or for better acceptance of dyes and other finishing chemicals—are said to be accomplished at lower cost and greater uniformity than with batch-bleaching methods.

The photos (left) show the laboratory model of this continuous bleacher with the pressure chamber closed for operation and with the interior roller arrangement exposed for observation or adjustment. **(Circle E-1 on the Reader-Service Card)**

E-2—Centrifugal dryer, the Hypar Model SCD, recently developed by American Tool & Machine Co., offers automatic discharging. The machine can be loaded standing still or rotating slowly, as required. Automatic discharge of bulkier solids is said to be faster and easier because the bottom opens to full inside diameter of basket. The Hypar Model SCD is currently being used for textile reclamation and in other fields.

. . . Turn the page

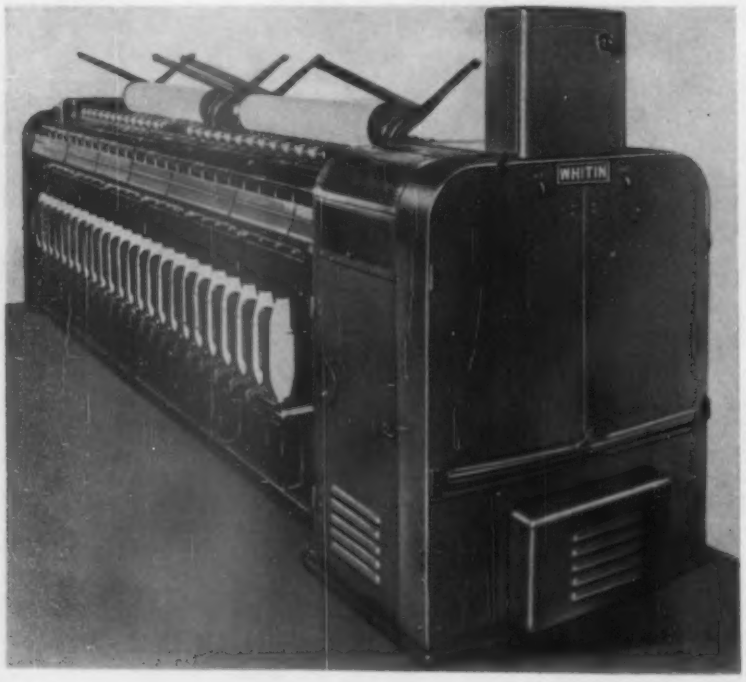
For more information on any of these items, circle appropriate number on the Reader Service Card, next to the back cover.



Draper Offers Two Brand-New Looms

A new X-3 Model loom designed to weave all the fabrics woven on the X-2 and also many man-made-fiber fabrics commonly woven on the XD, is now available from Draper Corp. With a weight increase of nearly 500 pounds over that of the X-2, added stability is achieved. The 50-in.-wide version of this loom operates at 200 ppm. (left photo, above). It can be furnished with clock-spring top, up to six harnesses, cams on auxiliary shaft, or four harnesses with cam-on-cam shaft. It may also be furnished with 16-harness, $\frac{1}{4}\frac{5}{8}$-in. gage dobby, or 20 harness, $\frac{3}{8}$-in. gage dobby.

Another new Draper loom, also of conventional type, is the XB Model (right photo). Designed primarily to weave heavy suitings, the XB incorporates many of the design features of the XP-2. The 72-in. XB operates at 166 ppm., may be equipped with cams on auxiliary shaft (two sets), two sets of clock-spring top, center fork filling motion, Tru-Tension let-off, and the Draper automatic filling magazine (which is said to reduce bobbin handling, thus permitting substantial mill savings). The XB can be built with a dobby, and with or without a 2x1 box motion. **(Circle E-3 on the Reader-Service Card)**



Wool Spinning Frame for Better Yarns

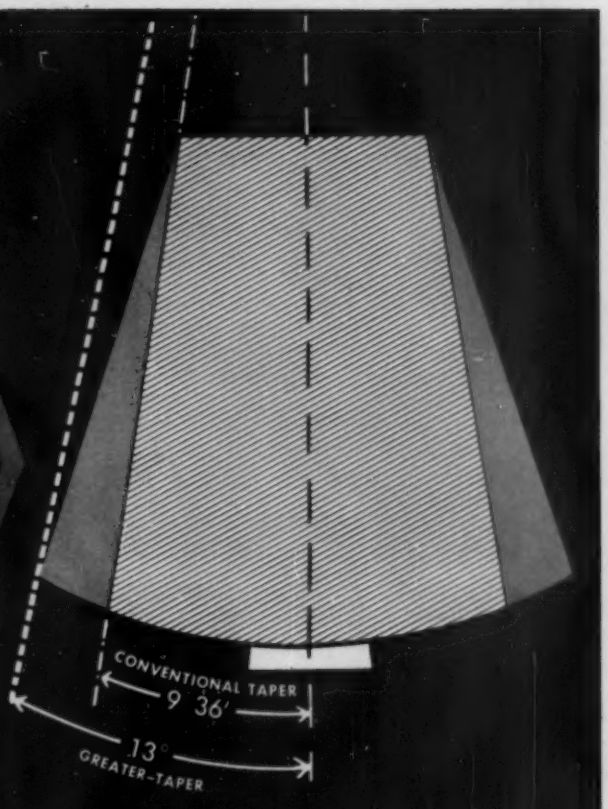
A new wool-spinning frame by Whitin Machine Works features balloon control rings and a variable-speed drum drive. Called the Flex-Spin, the new frame combines several other innovations including longer traverse, simplified spindle drive, and an antifriction spindle.

The reciprocating motion, applied to both ring and spindle rail, permits traverses up to 16 inches with a minimum of yarn-tension variation. Up to 20 ounces of soft knitting yarn and up to 32 ounces of weaving yarn can be wound on the bobbins. A new heavy duty (but lighter) spindle has been developed for the Flex-Spin frame. Bobbins are top-hung. A new, two-side shaft drive drives the twister heads. **(Circle E-4 on the Reader-Service Card)**

. . . *Turn the page*

THE FOSTER *GREATER-TAPER* CONE...

Why Knitters Need It



If you sell spun knitting yarns, or if you are a knitter and do your own winding, you *need* the Foster Greater-Taper Cone, produced on the Foster Model 102.

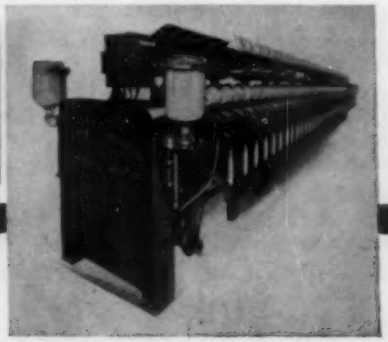
This is because Foster Greater-Taper Cone delivers freely with minimum drag at the knitting machine and thus prevents tight loops and even at times prevents breaks.

It's all a matter of clearance of yarn when the cone is full. Note in the illustration that the yarn does *not* clear the nose of a conventional 9°36' cone, but that it *does* clear the nose of the Foster Greater-Taper Cone, with room to spare, because the latter has a 13° taper, when full.

If you spin sale yarn, wind it on the Foster Model 102 and be prepared to supply the cone that knitters *need*.

If you buy yarn on cones ready for the knitting machine, insist that the cones be Foster Greater-Taper Cones and thus protect the quality of your fabrics.

THE FOSTER MODEL 102 WITH YARN CONDITIONING ATTACHMENT



553-9

FOSTER MACHINE COMPANY

A Yarn Winder for Every Purpose

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Equipment and Supply News

Begins on page 133

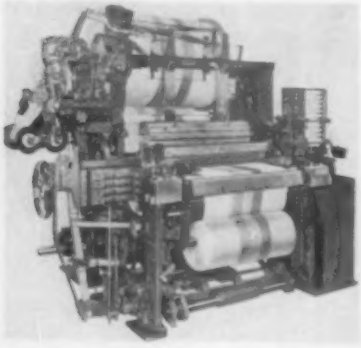
For more information on any of these items, circle appropriate number on the Reader Service Card, next to the back cover.

Draw Frame Produces Faster

The newest M6 four-delivery Even-Draft drawing frame by Whitin Machine Works increases production to 600 fpm. on carded work and 450 fpm. on combed work —at least 50% higher than previous rates. The PneumaClar waste-removal system involves a new cover to include the trumpet area.

A rotating cam table is supplied with the new frame for use of up to 18x42-in. coiler cans for greater speed in doffing and creeling. Other features include a V-belt drive, antifriction bearings, "soft-start reactor switch," and an electronic stop for the top rolls.

The customary four-over-five drafting mechanism and large roll diameters are used. The arrangement provides flexibility and control over the full fiber range from ⅞ inch to 3 inches. **(Circle E-5 on the Reader-Service Card)**



C & K's New Looms

Three new looms are offered by Crompton & Knowles Corp. in its C-7 series. They have many things in common—automatic bobbin-changing with 4x1 or 2x1 boxes, harnesses up to 25, dobbies controlled by punched patterns, and new automatic controls.

The C-7 terry loom (see photo) is available from 38 to 60 inches between swords and has a reversing roll motion for dobby control. When the punched roll is rewound to the start, it reverses again, repeating the cycle as many times as needed to run out the warp. Rolls containing the patterns are easily changed.

The C-7S loom is for fine-filament fabrics. In addition to the usual C-7 features, it includes a 4-color rotary magazine of 36-bobbin capacity. An optical electronic feeler takes its indication for transfer from the bobbin while shuttle is in flight.

The C-7A loom is designed especially for light- and medium-weight suitings of worsted or blended yarns. Width is 82 inches between swords. It may have 25 harnesses and a ⅜ inch gage dobby or 20 harnesses and a $\frac{1}{2}\frac{1}{2}$ inch gage dobby; also a 4x1 box. An innovation is its cam lay drive that controls the lay for slow motion. **(Circle E-6 on the Reader-Service Card)**

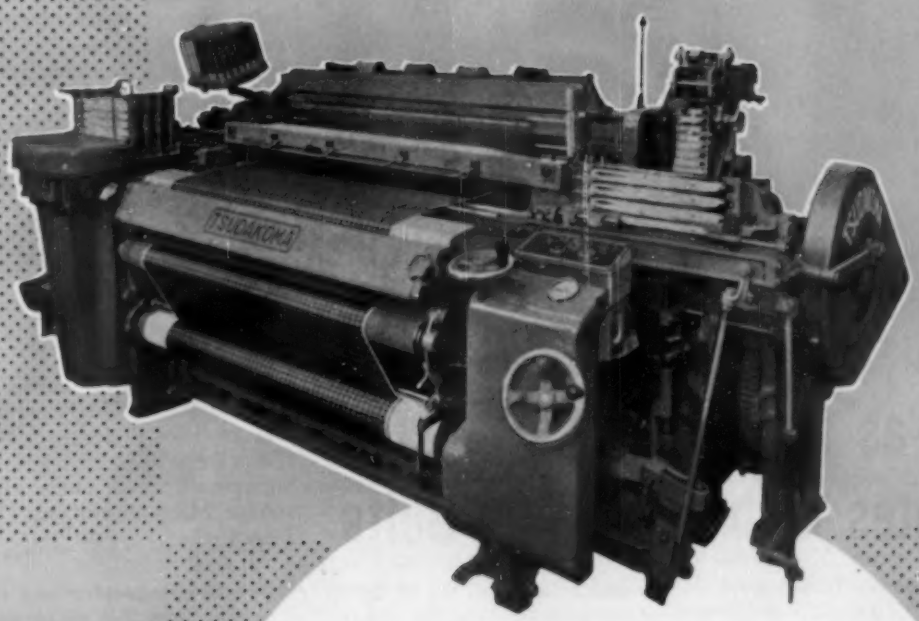
E-7—Model P roving frame introduced by Whitin Machine Works features higher speeds and larger packages. Flyer speeds: up to 1,200 rpm. Up to six pounds of cotton roving can be wound on the new 14x7 bobbin. A special cone-drive has been adopted to provide the variable speed necessary to accommodate the changing size as the bobbins become filled. The frame is available in lengths up to 96 spindles. Design innovations include spring counter-balancing of the bobbin rail, new system of electrical relays and controls, modernized head end, and integral waste-collection system.

A 96-spindle Model P roving frame is said to deliver up to 600 pounds of cotton per doff, which is accomplished in about 60% of the time required on conventional frames. The 100-oz. bobbin makes possible reductions in spinning-creeling time. Transmission of power to the drive shaft is through and air-operated disc clutch.

E-8—Automatic ball-doffer and can-doffer units are offered by Warner & Swasey Co. The self-contained automatic ball-doffer unit is designed to wind, doff, and resume winding of a new ball without operator assistance. Capable of handling 18x24-in. balls weighing up to 50 pounds, the new unit improves efficiency and reduces downtime. Doffing cycle requires less than 12 seconds. Semicircular bin delivers finished balls directly to automatic transfer system. Unit is powered by its own ½-hp., 3-phase, 60-cycle motor. The automatic can doffer unit provides fully automatic system for the single-head pin drafter intersecting draw frame. The doffer holds three 18- or 20-in. cans on a circular base that indexes the cans into position. While the can beneath the pin-drafter coiler mechanism is being filled, the other two cans are held in reserve. When the first can is filled with the preset yardage the doffer automatically indexes 120°, doffs the full can and locks the next empty can under the coiler.

. . . Turn the page

Tsudakoma



ツダコマ

Automatic Loom and Ordinary Loom

Dobby

Preparatory Machine

Throwing Machine
High Speed Bobbin Winder
Doubling Machine
High Speed Bottle Winder
High Speed Warping Slasher
High Speed Sectional Warper
High Speed Magazine Creel

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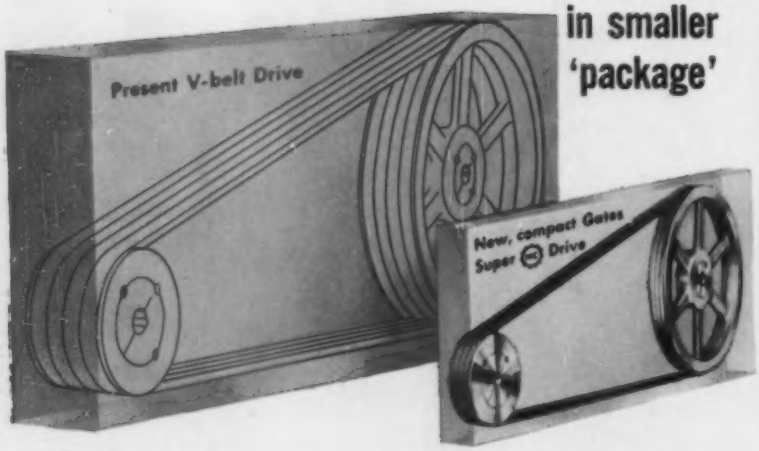
Same HP capacity in smaller 'package'



Industry cuts drive costs as much as 20% with Gates high capacity V-Belts

By putting power transmission in a smaller package, Gates 'performance-proved' Super HC V-Belt Drive has cut costs all along the line—for all kinds of industries—since its introduction more than a year ago.

As a replacement drive on equipment *inside* the plant, or as the drive on equipment *manufactured for sale* the Super HC Drive has enabled thousands of industrial users and OEM's to reduce sheave diameters 30% to 50%, overall drive space up to 50%, and drive weight 20% and more. *Initial drive cost has been cut as much as 20%.*

BEFORE ◆ AFTER ◆

COMPARE: Conventional drive at left was replaced with Gates new Super HC V-Belt Drive at right. Three of Gates new, narrow HC V-Belts do the work of the former 6 standard width belts. In this application the new drive actually takes *one-third* the space of old!

Nation-Wide Engineering Service

A Gates Distributor can show you how to effect savings with Super HC V-Belt Drives. Ask him for your free copy of "*The Modern Way to Design Multiple V-Belt Drives*," or write to The Gates Rubber Company Sales Division, Inc., Denver, Colorado.

TPA 535

The Gates Rubber Company, Denver, Colorado
Gates Rubber of Canada Ltd., Brantford, Ontario

Gates — *World's Largest Maker of V-Belts*

Gates Super HC V-Belt Drives

NEW LITERATURE

. . . *Begins on page* 96D

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L-22—Plant safety kit, to make material-handling operations safer and more efficient in production, storage, and shipping, shows proper handling techniques for lifting, transporting and stacking various loads. Towmotor Co.

L-23—Heavy-duty truck that features a motor wheel drive balanced by an offset caster wheel is described in 2-p. Bulletin 621, which gives specifications designed for narrow-aisle operation. Diagrams and tables are included. Raymond Corp.

L-24—Motor guide outlines motor characteristics and includes information on motor designs. Bulletin (Form 270B) has 16 pages, covers horsepower, speed, frame size, and voltage. Many illustrations. Century Electric Co.

L-25—Circuit breaker load centers extending from 2 to 40 circuits, 40 to 200 amperes, in flush, surface and raintight enclosures, are described in 16-p. Bulletin GEA-7071, covering many special applications. General Electric Co.

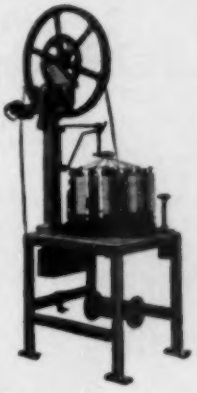
L-26—Industrial capacitors that reduce power costs and increase system capacity are described in 12-p. Booklet B 7642. Application for industrial use, power factor, and benefits of capacitors are discussed. Westinghouse Electric Corp.

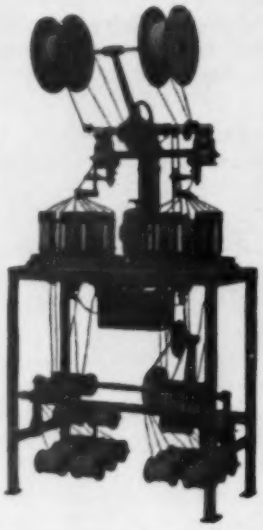
L-27—Rust remover described in 2-p. illustrated folder saves labor and avoids replacement costs by removing rust and conditioning metal surfaces. Uses covered by folder include cleaning and removing discolorations. Rusticide Products Co.

L-28—Pneumatic conveyors are covered in 8-p. report. Three basic systems, basic elements of each system, component parts, types of conveying lines, valves, indicators and controls are described. Photos and diagrams are featured. Fuller Co.

BRAIDING MACHINES

of most up-to-date systems





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The most complete, comprehensive listing of companies supplying New Machinery Supplies & Services ever published. Manufacturer's name, complete address and the page or pages on which his ad appears are contained under each appropriate heading—another FACT FILE exclusive! Advertiser's listings, with page reference, will appear in bold-face type.

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Handsome, long-wearing, by popular demand . . . for the 1960 FACT FILE ISSUE, the reference book that gets 12 months hard service

Don't take our word for it —try a new RIDGID Flaring Tool! See if you don't get smoother, stronger, more uniform flares . . . in less time and with less effort than ever before!

Then, compare this new RIDGID Flaring Tool, feature-by-feature, with any flaring tool you've ever seen or owned:

• Feed releases automatically when flare is fully formed. • Reversing feed screw burnishes flare. • Hardened steel die bars are precision-machined. • Large, comfort-grip feed screw handle turns easily. • Precision-ground, hardened steel flaring cone, eccentrically mounted in precision bearings, produces rolling action for even metal flow . . . gives uniform flare walls without galling. • Tubing hole sizes are clearly marked. • Easy sliding rugged malleable yoke serves as stop for tubing to give correct flare size. • Yoke clamp screw fits into centering hole . . . locks bars, yoke and tubing into perfect alignment. • Stop pins keep yoke on die bars at all times . . . yoke can't slide off.

3 MODELS:

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See and try these new RIDGID Flaring Tools. Your Supply House has them.

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CIRCLE 139 ON READER SERVICE CARD

Atlas

Presents

The New A.A.T.C.C. Perspiration Tester

Model PR-1

For Methods
15-1960 Colorfastness to Perspiration
63-1957 Colorfastness to Water

This inexpensive and compact model offers many advantages not found in previously available equipment.

As illustrated, the unit is loaded in the vertical position. After the top plate is locked in place by the thumb screws, the weight is removed and the unit turned over on its back and placed in the oven in the horizontal position.

A 10 pound dead weight loading is utilized with the springs compensating for any shrinkage which may occur as the specimens dry out.

Separate units should be used for the acid and alkaline tests as there may be an interaction if both are used in the same unit. Where two or more units are to be used in one laboratory only one weight is needed.

Specifications

1 to 20 samples may be tested simultaneously

Weight of unit and plastic plates 5 lbs.

Dimensions 3" x 8" by 5¾" high

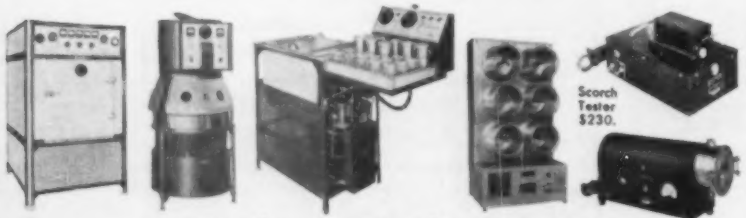
Stainless steel construction except for plastic plates and weight

Model PR-1 A.A.T.C.C. Perspiration Tester complete with 21 plastic plates but not including weight **$34.00**

P-9901 Weight only for PR-1 Perspiration Tester **$7.00**

Stocked for immediate delivery

F.O.B. our plant Chicago • Shipping weight: 15 lbs.



Weather-Ometer® $2755 up.

Fade-Ometer® $1350 up. Complete with supplies.

Launder-Ometer® $875 complete with accessories and supplies.

Random Tumble Pilling Tester $485 to $890.

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ADVERTISERS' LITERATURE

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A350—Nylon Travellers. Send for Color Chart and Samples. Write for Coats & Clark Inc. Traveller Div., Dept 15.

A351—Engineers, Architects. For information write for literature. Lockwood Greene.

A352—Rotary Unions & Unitraps. Write for Bulletins 700 and 800 for details. Perfecting Service Co.

A353—Power Transmission. Information on various types, write for the following Bulletins—
8102-4101 Variable Speed Drives
Bulletin 6100 Card Drive.
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A355—Water Resin. For free sample of Piccotex and literature write. Pennsylvania Industrial Chemical Corp.

A356—Caustic Soda. For Buyers Guide. (booklet) on Caustic Soda write. Hooker Chemical Corp.

A357—"AC" catalysts. Write for complete technical data and expert finishing counsel. Monsanto Chemical Co., Plastic Div.

A358—Permaglas Storage Units. For further information send for Bulletin MU-107, "Permaglas Mechanized Storage Unit." A. O. Smith Corp.

A359—Valves, Stainless Steel. Write for Catalog No. 59SS for further details. Jenkins Bros.

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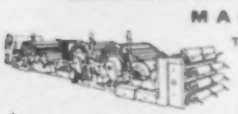

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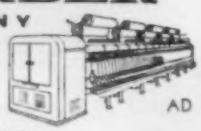

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CALENDAR

September

Production Engineering Show, Navy Pier, Chicago, Ill., Sept. 6 to 16

Canadian Textile Seminar, Queen's University, Kingston, Ontario, Sept. 7 & 8

Combed Yarn Spinners Association, annual meeting, The Cloister, Sea Island, Ga., Sept. 8 & 9

Textile Quality Control Association fall technical meeting, Clemson House, Clemson, S. C., Sept. 8 & 9

Southern Textile Overseers Association, family meeting, Greenwood, S. C., Sept. 17

First International Textile Dyestuffs, Finishes and Auxiliaries' Exhibition, Free Trade Hall, Manchester, England, Sept. 22 & 23

Chemical Finishing Conference, sponsored by the National Cotton Council, Statler Hotel, Washington, D. C., Sept. 27 & 28

October

21st Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 3 to 7

Carded Yarn Association, annual meeting, Grove Park Inn, Asheville, N. C., Oct. 6 & 7

Southern Textile Overseers Association, annual meeting, Hotel Greenville, Greenville, S. C., Oct. 7

Institute of Textile Technology, technical advisory committee and board meeting, Charlottesville, Va., Oct. 18 & 19

Ga., TOE, fall meeting, Hightower Building, Georgia Institute of Technology, Atlanta, Ga., Oct. 22

November

Thread Institute, annual meeting, Hotel Commodore, New York, N. Y., Nov. 10

Textile Education Foundation, annual meeting, A. French Textile School, Georgia Institute of Technology, Atlanta, Ga., Nov. 12

Alabama Textile Education Foundation, fall meeting, Thach Auditorium, Auburn, Ala., Nov. 12

ASME, winter annual meeting, Statler Hilton Hotel, New York, N. Y., Nov. 27 to Dec. 2

National Exposition of Power & Mechanical Engineering, New York Coliseum, Nov. 28 to Dec. 2

1961

April

45th Knitting Arts Exhibition, Civic Auditorium, Atlantic City, N. J., April 24 to 28

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Equipment & Supply News

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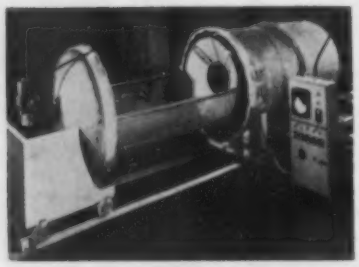
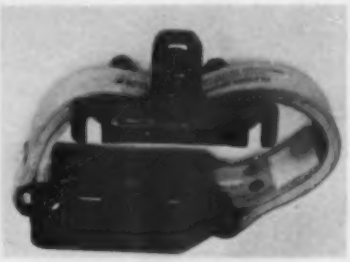


E-11—A fiber setter of 1,000-lb. capacity is on the market for handling man-made fibers in skeins on bobbins or as sliver. The basket carrier is mounted on the door. The cylinder or shell is 6 foot in diameter and 10½ foot long. A wide range of pressures (or vacuum), humidities, and temperatures are possible and are automatically controlled. The equipment requires 17x 26½ ft. of space. *Turbo Machine Co.*

E-12—Computer that reads documents is said to analyse 10,000 individual sales in 12 minutes and to write pay checks and payrolls records for 1,000 employees in half a day. It sells for $75,000 and can be rented at $1,850 a month. *National Cash Register Co.*

E-13—A sample-cutting press for cutting up to 40 plies of light-weight fabric is available. Die holder diameter is 8 inches. For 2-tons ram pressure on this NAEF press, 80-lb. manual force is needed. Product and waste are ejected with each release. *SMS Instrument Co.*

E-14—Stretch-yarn production at 350,000 rpm. spindle speed is said to be a practical achievement on the new No. 553 machine. Textured yarn from the largest package may be turned out at ultra-high speeds, ranging from 50,000 rpm. up. Twist range is from 33 to 130 tpi. on 20- to 200-den. filament. There are 156 spindles per frame. The heater gives 28-in. contact. Drive permits control of speed for feed rolls, take-up rolls, and tailing device. Take-up package is straight-sided, headless, parallel tube with 5½-in. traverse. *Leesona Corp.*



E-15—A new shuttle-checking device is applicable to X, X-2, XD, XL, S-5, S-6, and other looms. Useful life is said to be long. Nucheck is available with all-leather, or leather-fabric strap. The shuttle boxes better and with less power. *Slip-Not Belting Corp.*

E-16—A wool-spinning tube up to 17¼ inches long is now offered by a supplier to equip the newest wool-spinning frames launched this spring with giant packages. The tube is impregnated to allow steaming without rewinding. It is also grease resistant. *Textile Corp.*

E-17—New refinements in lift trucks have recently been shown. These refinements include (1) Monotrol control system whereby one pedal combines forward and reverse selection and throttle, eliminating shift levers; (2) heavy-duty oil clutch for pneumatic-tire lift trucks; and (3) three-stage upright which combines high lift with minimum lowered height. *Hyster Co.*

Equipment and Supply News

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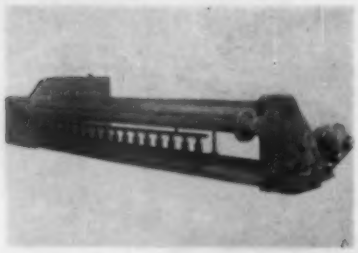
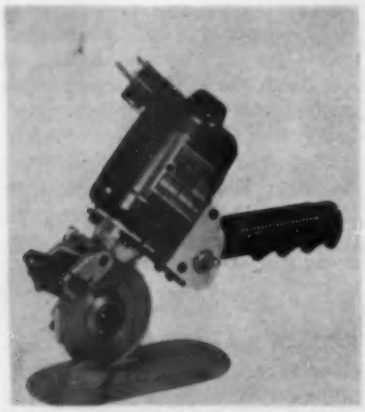


E-18—Paraffin application to carpet warps is said to avoid the usually separate sizing operation since the applicator may be run in connection with a heavy-duty warping machine. The apparatus comes from Italy where new installations are reported to be in operation. *Tessiltecnica.*

E-19—Change-overs for most spinning frames have been modernized, and one maker has a newly designed Shaw to Double-Apron-Shaw change-over. A new Cavalla Roth drafting incorporates a new fiber-control method, 60-degree roll stands, and ball-bearing bottom steel rolls. Applied to some of the change-overs is tension weighting which eliminates weights, levers, stirrups, springs, and magnets. *Dixon Corp.*



E-20—A "baby"-size cutting machine is newly available. Known as Model BB, it weighs less than 8 pounds and is fitted with a 2½-in. round knife. It is said to cut a single ply of fabric or layers not over ¼-in. high more efficiently than shears. *Eastman Machine Co.*

. . . *Turn the page*

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Equipment & Supply News

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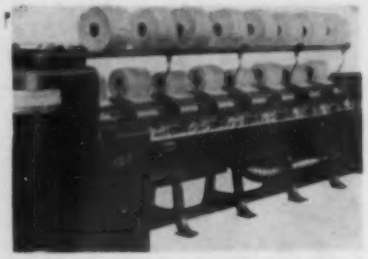


E-21—A high-production comber, the Hartford 8, is newly introduced here from England. It is an 8-head machine, said to comb 60 pounds per hour. Laps of 20 to 40 dwt. may be processed and slivers of 40 to 60 grains per yard produced. *Platt Bros. (Sales) Ltd.*

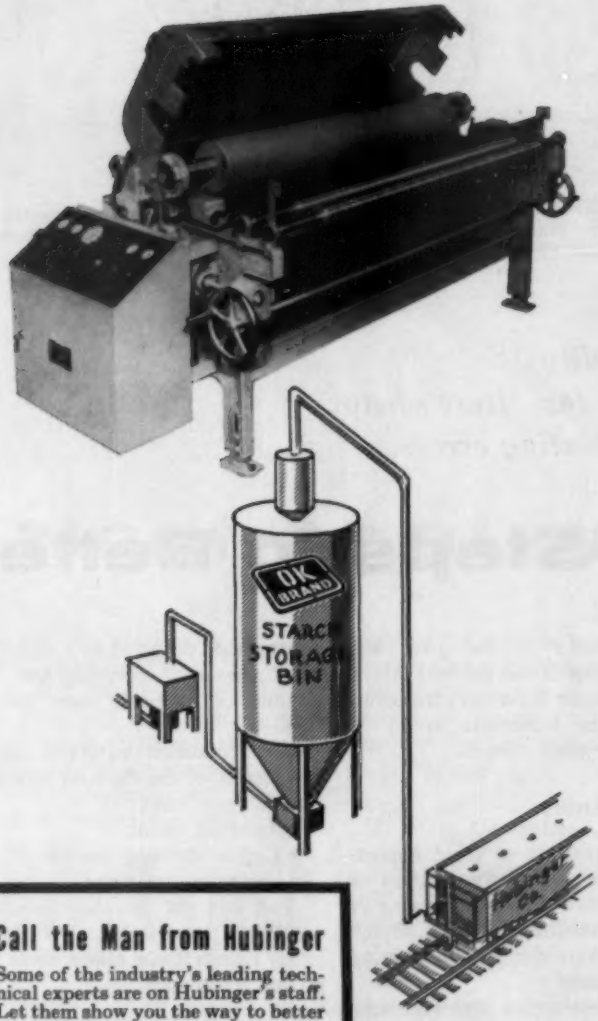
E-22—Superior head design features new jack spool. Known as Lock Eze, the head possesses a vulcanized-fiber insert which interlocks with tube, assures concentricity, and prevents head from turning. Spools are available in lengths of 33 to 72 inches with head diameters of 5 to 12 inches. *National Vulcanized Fibre Co., Lestershire Div.*

E-23—A new core-crimping machine to produce Ban-Lon and Textralized bulk yarns is currently under field tests. This Model 88 is turning out a bulk yarn which accepts package-dyeing without loss of bulk often experienced. Such yarns were previously skein- or muff-dyed. The crimper, designed by the owner of the trademarks, will be built by Foster Machine Co. *Joseph Bancroft & Sons Co.*

. . . *Turn to page* 151

What you should know about STARCH*

YOU PROBABLY KNOW—BUT OTHERS MAY NOT



Q. At what relative humidity are starch films the most effective?

A. Starch films are most effective at relative humidities between 70% and 80%. In this range, they retain maximum toughness and elasticity.

Q. What is the ideal moisture content of a cotton warp as it comes off the slasher?

A. Cotton warps weave better with a moisture content of 6.5% to 8.5%.

Q. What are the difficulties experienced when a warp is over-dried?

A. The strength will be greatly reduced and will be hard to tie. It becomes brittle and sheds easily, losing its elasticity, which no amount of moisture can return to it. It is also hard to desize.

Q. What are the problems encountered when too much moisture is left in the warp.

A. The size film will become soft and sticky and will not provide proper protection for the yarn on the loom. Fuzz-balls and matting may also be encountered. Its susceptibility to mildewing is increased.

Q. WHAT ARE THE BEST STARCHES AVAILABLE FOR SIZING COTTON AND SPUN SYNTHETIC WARPS?

A. OK BRAND STARCHES, of course, manufactured by THE HUBINGER COMPANY.

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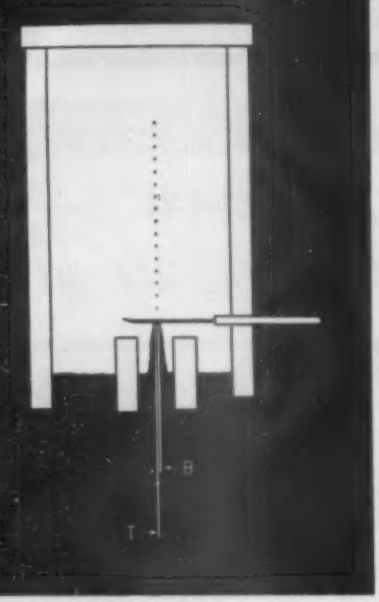
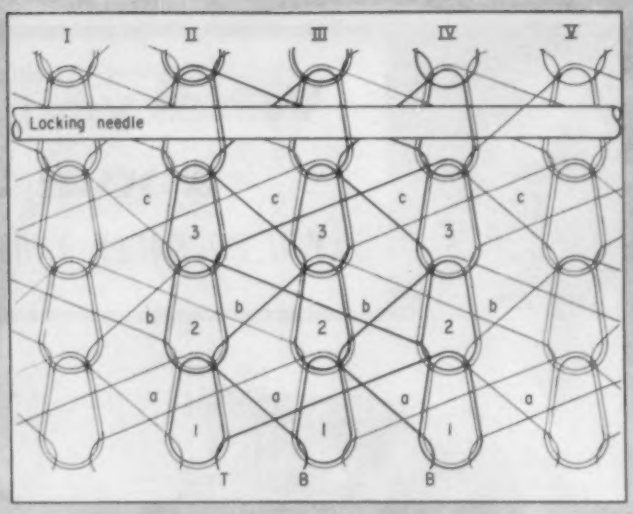


1. MOUNTING A SAMPLE fabric on a black plastic surface is the start of extraction.



2. UNRAVELING actually starts with wales I, II, and IV from the top (T) warp. You are concerned only with these threads and two threads from the bottom (B) warp.

Best way to be sure of better quality warp-knit goods is to spot trouble fast. Here's help in speeding fabric analysis, pinpointing errors.

6 Steps to Better

By CHARLES A. HAYES, Quality Control Engineer, Lee Dyeing Co. of Johnstown, Inc., Johnstown, N. Y.; and THOMAS H. JOHNSON, Textile Consultant, Schenectady.

CONSTANT RUNNER EXTRACTIONS are necessary when you analyze tricot-jersey fabric, because runners are constantly fluctuating. In some instances, they are out of acceptable range.

You'll do well to remember that extractions from a sample can be related only to this sample. They do not necessarily represent the piece of fabric as a whole, much less the whole batch.

If the extracted runners show appreciable differences from the intended runners (especially in the ratio between them) the runners have not been controlled properly during knitting. Therefore you'll find variations in the yield and course counts of the finished fabric.

It's common in runner extractions to encounter variations up to ± 4% of the given runner.

Spotting Errors

Extractions are of great importance in finding out the amount of runner or yarn stretch that occurs in the tricot machine. Yarn stretch often develops during the knitting operation itself.

On a construction with relatively short runners, the knitter should adjust the knitting elements to provide the desired shorter quality.

When the knitter attempts to obtain the short runners solely by applying more tension on the warps, the runner lengths on the machine are being measured under a stretched condition and their true length will be somewhat short. Runners extracted from such fabrics are shorter than designed by a considerable amount, depending on the amount of excessive warp tension applied.

This condition naturally affects the results of the finished fabric in any of three ways:

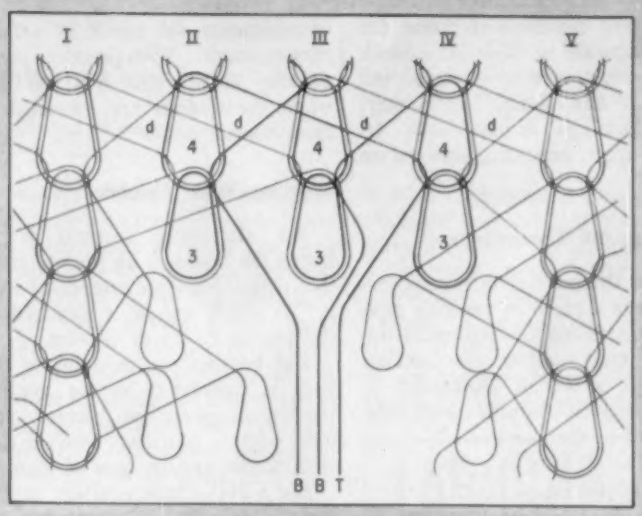
- Reduced yield.
- Tighter dressing tension.
- Higher course count.

You can get accurate measurements of runner lengths from tricot jersey fabrics if you follow these improved techniques:

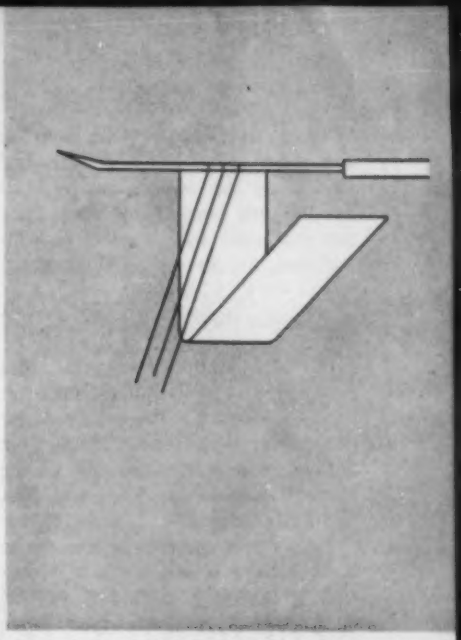
1. Mount a Sample

Start with a 15-den. jersey fabric. This small thread diameter leaves more space between the stitch loops (and the monofilament yarn eliminates the hazard of broken filaments).

Use a 5X to 10X magnifying glass, especially at the start. An offset-type glass is best because the



3. PICKING is the next step. Fabric has now reached this unraveled stage so that the pick is used at areas d, d, d, and d. This procedure is continued throughout unraveling.



4. SECURING unraveled threads is next. Do it with a piece of masking tape, gummed side up.

Tricot Analysis

base will not interfere in the area directly under the lens.

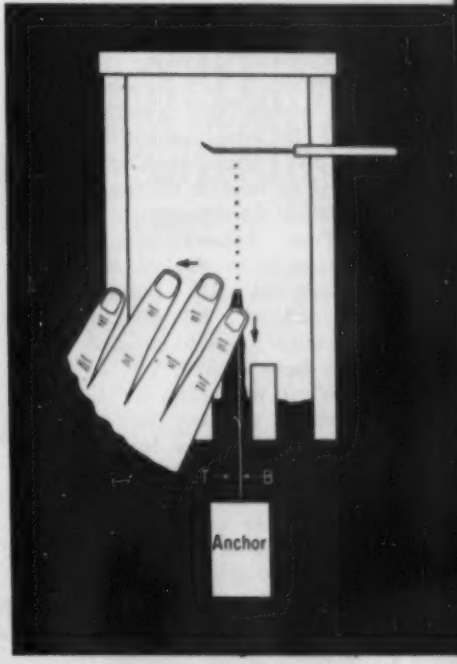
Mount a sample of fabric 5 to 6 inches-long and 2 to 3 inches-wide on a black surface, preferably plastic. Mount the sample with the rib or loop side up and with the round section of the stitch loops toward you.

Place two strips of tape at the lengthwise sides of the sample and one strip at the top. Stretch the sample a fair amount in the widthwise direction. Then place two short pieces of tape at the bottom edge of the sample parallel to the length of the sample and about ½ to ¾ inch apart.

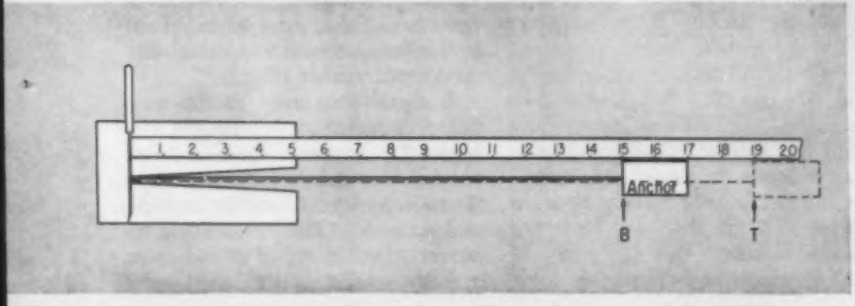
2. Begin Unraveling

Now the mounted fabric is ready to be unraveled.

The shaded threads forming



5. DISSECTING requires finger dexterity and "feel." Your left hand stretches the fabric while your right hand dissects the wales with the pick.



6. MEASURING calls for correct tension, the criterion of the test. Bottom (B) threads and top (T) threads are each fastened to a separate anchor.

. . . *Begins on page* 148

Wales I, and II, and IV are from the top warp (T). These threads and two from the bottom warp (B,B) are the only ones of interest. They are extracted by completely disintegrating the three shaded wales.

3. Use the Pick

First, insert the pick in the areas between the wales designated as a, a, a, and a. Then move the pick downward toward you. This action removes the ends of all the threads from Loops 1, 1, and 1 in the first course.

Next apply the pick to the Areas b, b, b, and b and work it downward. Loops 1, 1, and 1 will be completely withdrawn from Loops 2, 2, and 2. Work the pick again in Areas c, c, c, and c so that loops 2, 2, and 2 are withdrawn from Loops 3, 3, and 3. At this point the fabric looks as shown in Illustration 3 above, with the pick being used next at Areas d, d, d, and d. Follow this procedure throughout unraveling.

After you have unraveled five or six courses, the extracted threads will be long enough to apply tension. Stroke the threads downward to remove the kinks and to facilitate the reduction of the loops.

Then unravel several more courses to be sure the threads are coming out freely. But never apply the pick to a following area until all three loops in a given course have been reduced.

When unraveling is proceeding smoothly, you only have to use the pick in the spaces between Wales I and II and between Wales IV and V and to work alternately back and forth. Take extreme care that the loops in Wale II are not reduced faster than the loops in Wale IV, and *vice versa,* to prevent snarling.

When the extraction proceeds satisfactorily, insert the locking needle a few courses above the last point of unraveling. You'll have to lock only the loops in the three wales being unraveled, as shown in illustration 2. Then unravel to the point of locking.

Count off a number of courses, depending on the test area desired. You'll probably want to go a distance of 160 courses.

Start with the loop engaged by the locking needle and count the courses upward in Wale IV. Mark every tenth course to minimize the danger of miscounting. This way, you'll have 16 marks, each 10 courses apart, extending upward on Wale IV.

4. Secure the Unravelings

Secure the unraveled threads this way: place a piece of masking tape with the gummed side up under the threads and against the locking needle as shown in illustration 4. Then carefully double over the other end of the tape.

5. Dissect the Wales

Withdraw the locking needle and start the dissection. Hold the pick in your right hand to remove the courses. Exert downward tension on the anchor with your left index finger. As the threads become long enough, exert this finger pressure on the threads themselves. At this same time, constantly stretch the fabric widthwise with the middle and third fingers of your left hand.

Before the unraveling gets to the end of the test area, reinsert the locking needle in Wales II, II, and IV and into the 161st course. Continue unraveling until all loops are reduced and all threads are free.

6. Measure the Length

With the locking needle still in place, turn the board at right angles and fasten it securely to the table. Extend the anchor until the two bottom threads are taut. Make a mark to indicate length.

Cut the two bottom threads and extend the anchor to establish the length of the extracted top thread. Mark it in the same way.

Obviously the amount of tension applied to the anchor influences the measurements. Nylon, particularly, is often overstretched.

As the anchor is pulled away from the locking needle, the kinks in the thread that result from the knitted loops will gradually straighten out. Almost immediately thereafter, you will feel a resistance that indicates the thread has reached its normal length. Then measure and record the distances from the locking needle.

Any extension beyond this point of resistance will result in a false measurement. With practice, you'll develop a feel that will tell you when the threads are extended to their normal limit.

Working With Weights

An alternative method is to fasten the board in an upright position with the anchor extended below it. A small weight is attached to the anchor to apply tension.

But because the modulus of the yarn is calculated on the applied tension in grams per denier, you must use a particular weight for each denier and/or type of yarn.

For a 160-course analysis, multiply the recorded measurements by three. This calculation gives the runner lengths per rack "as found." If the sample is gray fabric, the runners as found are a reasonably accurate representation of the knitted runners.

But if the analysis is of a dyed or finished fabric, a corrective factor must be added to compensate for the shrinkage of the threads in the finishing process. This shrinkage is not fabric shrinkage but is contraction of the fiber itself from the elements of time and temperature in scouring or dyeing.

Calculating Shrinkage

Each type of yarn has its own characteristic shrinkage properties. These properties in turn are affected by the time and temperature.

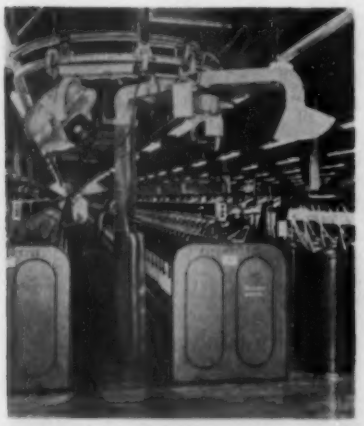
Nylon, for example, has an approximate shrinkage of 9 to 10% in beck dyeing. Nylon shrinkage in perforated-beam dyeing is about 6%.

Dacron tricot in beck dyeing normally shrinks about 12%. With pressure dyeing under tension, Dacron shrinkage is somewhere betweent 7 and 7.5%.

With each percentage of fiber shrinkage in finishing, the lengths of runners as found must be increased by this same amount to approximate the knitted runner lengths.

If there's an error in the estimated extracted runner lengths because of improper tension and incorrect fiber-shrinkage adjustment, the ratio as found must be considered accurate. There is no way to extract more of either thread than is really present.

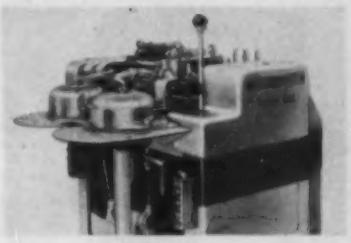
E-24—A twister for glass-fiber yarn is now on the market designed to produce larger shipping packages (up to 7 to 8 lb. net) than formerly. The machine is No. 513 tube-drive twister with spindle speeds from 3,000 to 8,000 rpm. and twists from 0.5 to 5.0 tpi. The builder-motion provides for taper-top, double-taper, or straight-sided bobbins. Traverse is 8 to 12 in. Thread-up and piecing are said to be quick and easy. The count range for glass-fiber yarn on this machine is 37/1/0 to 900/1/0. *Leesona Corp.*



E-25—An improved roving-frame cleaner also carries a fan for ceiling cleaning and a photo-electric cell functions to stop the equipment when a roving frame over which it is passing stops. The new Heliclone loom cleaner may run on track supported from the floor which lowers center of gravity and increases stability. Similar equipment may operate from a ceiling-hung track. *American Moistening Co.*

E-26—An electronic "Select-A-Spede" drive is available with control panel rectifying incoming a-c power to d-c for driving the Flexitorq motor. A control station has a speed-setting potentiometer and start-stop push buttons. Built-in protection devices are said to conserve the life of tubes in the panel. Drives range from ¾ to 4 horsepower. There is an 8 to 1 speed range. *Louis Allis Co.*

E-27—A high-speed Super Gill is available with entering speed averaging 15 yards a minute at only 1,430 faller drops. The gill is a single-head, dual-delivery model. Coilers have maximum surface speed of 165 yards per minute. It is equipped with a P.I.V. draft changer. *Holdsworth Mfg. Co., Inc.*



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Keeps cotton cleaner • *Avoids bale cutting*
Reduces fire hazard • *Saves labor*

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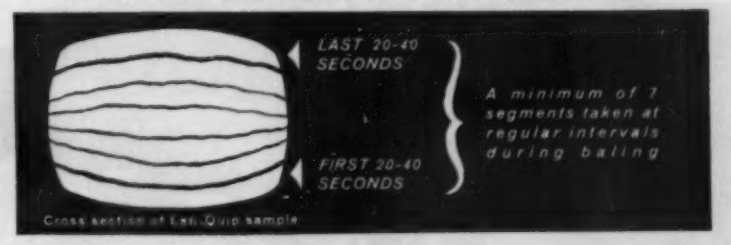
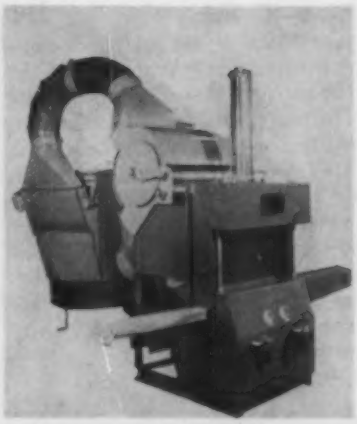

LAST 20-40 SECONDS
FIRST 20-40 SECONDS
A minimum of 7 segments taken at regular intervals during baling
Cross section of Lab-Quip sample

Write for complete information
LAB-QUIP ENGINEERING CORP.
Post Office Box 5308 Shreveport, Louisiana

. . . *Begins on page* 133

E-28 — A balling machine for woolen yarns places a controlled yardage in each ball and automatically proceeds with a new package as each ball is finished. The machine has 10 heads, most moving parts run on ball bearings, and steel and Perlon gears give quiet operation and are said to hold maintenance at a low point. Model K 1000 has electrical controls and stop motions. *Croon & Lucke GmbH.*



E-29—Automatic cotton sampling is done by new machine which meets requirements of U. S. Department of Agriculture. A minimum of seven segments per bale is taken periodically during ginning as representative of the bale. *Lab-Quip Engineering Corp.*

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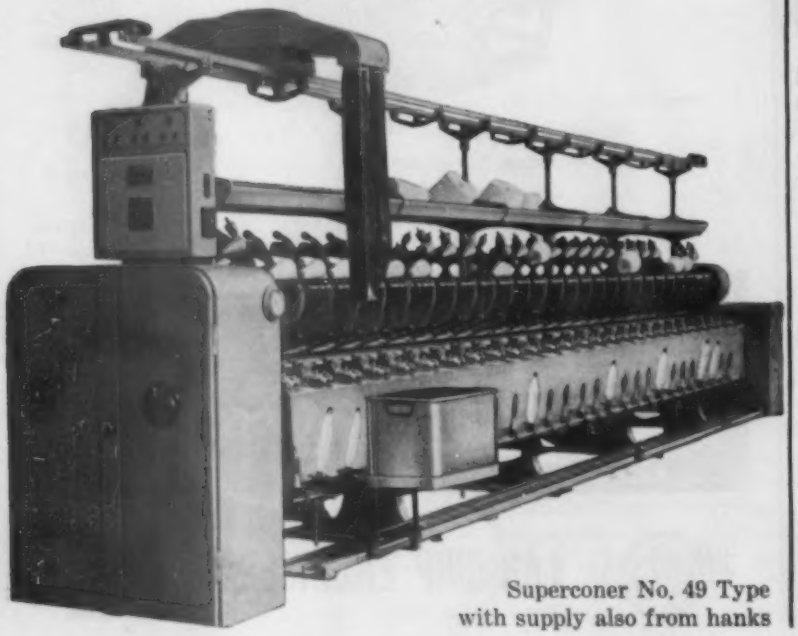
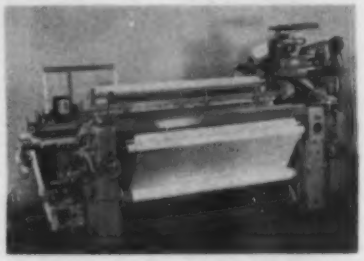


Superconer No. 49 Type with supply also from hanks

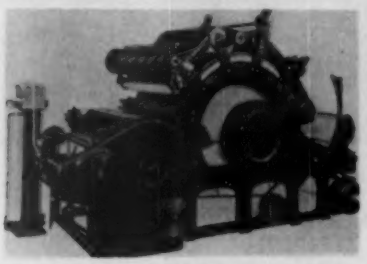


E-30—An archless loom made in Switzerland offers a combination of European-type weaving with Lee-sona's Unifil for bobbin winding and stripping integrally attached. This is type 100-W adapted for fine and coarse filling, and for man-made as well as natural fibers. Only 14 to 17 bobbins are said to be used per loom against 400 to 500 with conventional winding and storing. *Adolph Saurer, Ltd.*

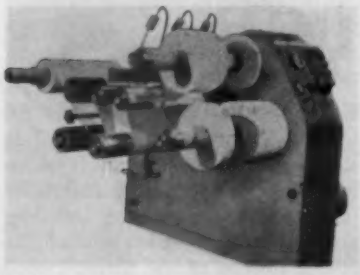
E-31—New variable-speed dissolvers are applicable to fixed tanks and many mixing problems. Sizes range up to 40 horsepower. Viscosities up to 50,000 centipoises or more are handled. Equipment is adaptable to sealed, vacuum, or pressure tanks. *Morehouse-Cowles, Inc.*

E-32—An electronic data-processing system, which will handle up to 6,000 additions or subtractions per second and print data at 900 lines of 120 letters each per minute, will be available in 1961. With the central processor, four magnetic-tape units, a printer, and a card reader, the system will rent for $8,660 per month. It is identified as Model 400. *Datamatic Div. of Minneapolis-Honeywell*

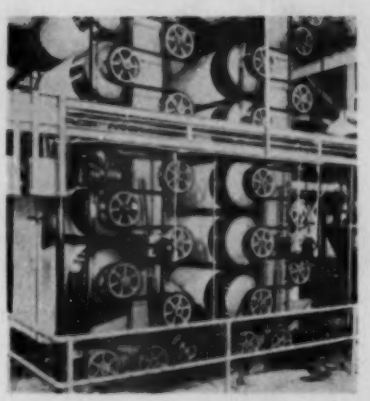
E-33—A submersible deep-well pump with new features is available. In 16 sizes from 5 to 40 horsepower, it will deliver up to 180 gallons per minute from well depths up to 1,450 feet. Assembly is corrosion resistant; motors are water lubricated. *Goulds Pumps, Inc.*



E-34—Latest-type cotton card from an English maker is equipped with "Crosrol" web purifier which is designed to pulverize all particles of trash in card web. Fiber control is aided by more accurate settings said to be possible. Further improvement is the Universal coiler, for cans of 16 and 18 inches in diameter and 36 or 42 inches in height. *Platt Bros. (Sales) Ltd.*



E-35—A line of doctor machines for salvaging telescoped or unevenly wound rolls of web materials, including paper and plastic up to 30-in. width, operates simply, with open-end loading and unloading. Equipment also serves for rewinding and slitting. *Stanford Engineering Co.*



E-36—Dry-can drives using double V-belts are said to show certain advantages. The belts in a southern bleachery are 700 inches in length, with V-surface design both top and bottom. They offer quiet, lubricationless operation and are said to hold up well under frequent starts and stops. The belts are known as R/M Super CC Double-V Belts. *Manhattan Rubber Div., Raybestos-Manhattan, Inc.*

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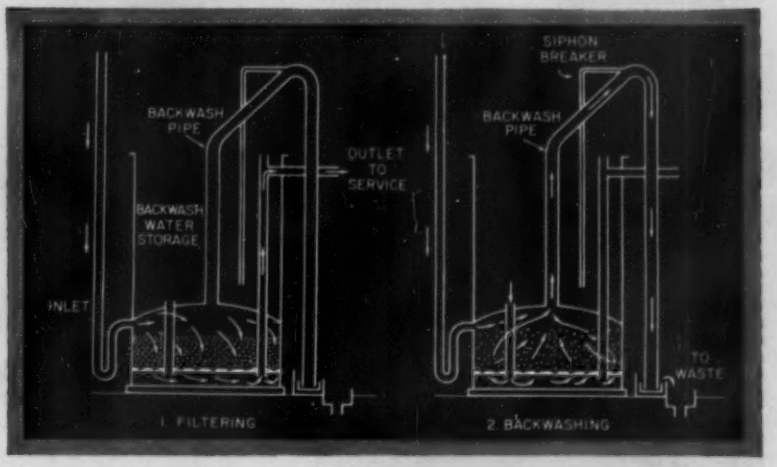
FLUIDICS* AT WORK



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Even though it costs up to 45% less than conventional gravity filters, this Permutit Automatic Valveless Filter gives you your biggest savings *after* you install it.

Every day it operates, it racks up husky savings because of the steps and equipment you don't need.

The diagram here shows you how the valveless filter works. During filtering, loss of head causes water to gradually rise in backwash pipe. When it reaches 4-5 ft. above the backwash storage level, it starts a siphon action. This lowers pressure above the sand bed, reversing the water flow, and backwashing begins. Backwash continues until the level in the backwash water storage tank falls below the end of the siphon breaker. Then the siphon is broken, and the filter automatically rinses and returns to its filtering cycle.

All done automatically without a single valve, agitator, gauge, pump, flow controller—or even an operator.

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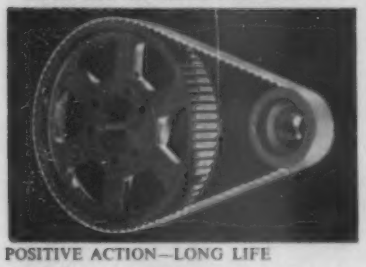
CIRCLE 153 ON READER SERVICE CARD 153

WOOD'S POWER TRANSMISSION PRODUCT NEWS

SIMPLE, EFFECTIVE, LOW COST

Wood's Card Drive offers all of the advantages of individual card drives without clutches or gear reducers to maintain. It is simple, smooth-starting and dependable . . . and costs less to buy, less to maintain. Write for Bulletin 6100.

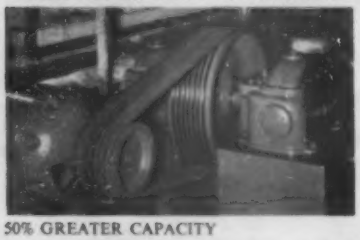
CIRCLE 253 ON READER SERVICE CARD



POSITIVE ACTION—LONG LIFE

Wood's Timing Belt Drives provide positive, slip-free action. Belts are all muscle. No high initial tension, tension devices or lubrication needed. Drives are light weight, compact . . . quiet and clean. Wide load and speed range. Equipped with famous Sure-Grip Bushings. Write for Bulletin 2100.

CIRCLE 254 ON READER SERVICE CARD



50% GREATER CAPACITY

New belt materials and manufacturing techniques give you 50% more horsepower from Wood's Sure-Grip V-Belt Drives. These drives are equipped with famous, interchangeable, tapered, QD-type Sure-Grip Bushings which feature standard and reverse mounting for greater adaptability. Write for Bulletin 197.

CIRCLE 255 ON READER SERVICE CARD

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Equipment and Supply News

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

. . . *Begins on page* 133

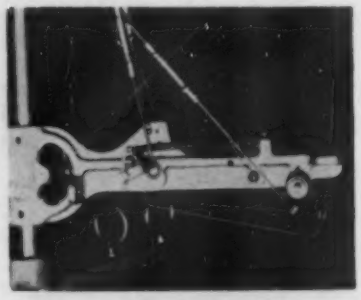
E-37—A new "C-Flange" gear motor is available as a unit, or separately for attachment to the customer's standard NEMA motors. Capacities range from 1/12 to 2 horsepower with reductions in convenient increments from 5 to 1 to 60 to 1. *Morse Chain Co.*

E-38—A ride-walkie electric lift truck has maximum width of 39 inches and forks adjustable from 12½ to 39½ inches. Capacity: 4,000 pounds. High stacking is facilitated by a mast of nested I-beam sections. *Yale Materials Handling Div., Yale & Towne Mfg. Co.*

E-39—A jacquard head is now being made by a French manufacturer and available in this country which will operate up to 190 rpm. The cards are lighter and smaller than often used. Adjustment of the lift or shed is by seven positions varying from 2.7 to 5.1 inches. The head is well covered as a protection against dust and lint, and also to prevent oil splashing on the cloth. *Verdol (Baxter Corp.)*

E-40—Blending at the drawing frame is improved in a new "Fleece Mixing" machine from Japan. The FM frame has a single delivery with two independent drafting assemblies. Four to eight ends may be fed to each assembly for a total of eight to 16 ends. Delivery speed of 400 feet per minute is said to be obtained. *Howa Machinery Ltd.*

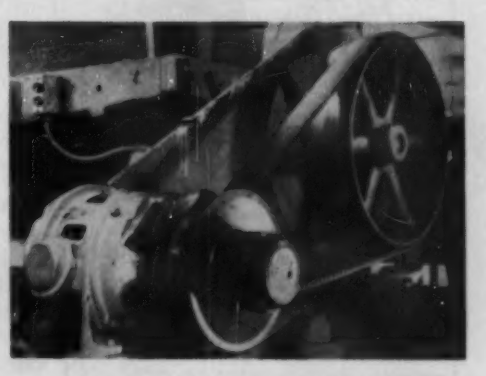
E-41—A new diaphragm material, said to be especially useful in a vacuum web-guide, is made of Reevecote 7049, a 0.030-gage Buna-N coated-nylon fabric. It is said to survive abuse, resist deterioration from oils and chemicals, and react instantly to slight changes in pressure. It has been adapted for some winding equipment made by Stanford Engineering Co. *Reeves Bros., Inc.*



E-41a—A new yarn tensioner for low or zero twist yarns utilized in the heels and toes of much seamless hosiery, produces controlled tension without squeezing and does not disturb the parallelism of the fibers. Instead of the spring-loaded disc device generally in use, this attachment operates by wrapping the yarn around a simple cylinder made of special plastic. Knitters, who find that unthrown man-made-fiber yarns do not respond well to pressure, may get improved results with this new tensioner. *Fidelity Machine Co., Inc.*

New, revolutionary "MCS" sheaves won't freeze, hold constant speeds

Wood's "MCS" motion control, variable speed sheave is entirely new and revolutionary in concept. It holds constant driven speeds under varying torque loads. And, like Wood's recently introduced "MS" sheave, the "MCS" won't freeze or stick. Practically no maintenance is required. No more downtime, running through the speed range or dismantling. The oil reservoir requires checking only once or twice a year. These amazing advantages are made possible by Wood's exclusive, resilient cam follower construction and rotational oil pumping action. Investigate these and many other features. Write for Bulletins 8102 and 4101.



Wood's "MS" variable speed sheave is similar in basic operating principle to the "MCS." Power is transmitted through resilient keys which are externally located, permitting unobstructed lubrication, elimination of freezing and sticking.

Woods

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CIRCLE 155 ON READER SERVICE CARD 155

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THE UNITRAP MODEL 70T Large Capacity and trigger action condensate discharge assure an uninterrupted flow of hot dry steam. Stainless steel working parts give extra-long and trouble-free service. This Unitrap has a universal pressure range from 0 to 125 lbs.

THE ROTARY UNION automatically adjusts to pressure changes and to misalignment of adaptors, and maintains a positive seal at all times without mechanical maintenance. Exclusive syphon construction assures maximum removal of condensate from cylinders.

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Equipment & Supply News

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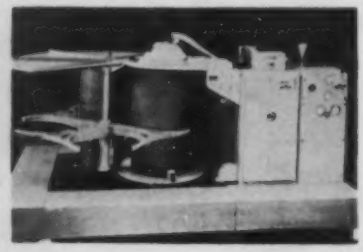
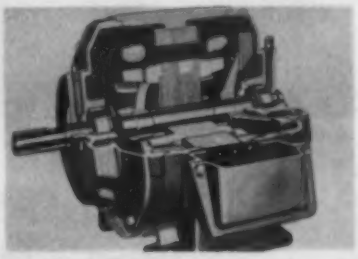


E-42—A new intersecting gill with weight control and automatic can (or ball) delivery is manufactured in West Germany but is available by direct representation in the United States. Maximum feeding speed is 55 yards per minute with about 6,000 faller drops. Card slivers varying as much as ± 25% are reduced to a variation of only a few per cent. A saving in manpower, electric power, and floor space is claimed. Delivery speed is controlled by P.I.V. system. *HMG Textile Machines* and *Texplant Corp.*

E-43—Thread guard casters recently designed especially for the textile industry have wide-spaced forks providing easy cleaning without dismantling. This is Series 33 and comes in 4, 5, and 6-in. wheel diameters, swivel or rigid. *Albion Industries.*

E-44—Drawn-cup roller bearings are newly designed for high capacity in minimum space. A hardened and ground shaft may serve as the inner race, but inner races are available for use with soft shafts. Long use without relubrication is claimed. Made in six sizes from 5/16 to 1⅛-in. shaft diameters, they are dimensionally interchangeable with company's drawn-cup needle bearings. *Torrington Co.*

E-45—Pot spinning, with air-control of the sliver, is offered in a 304-spindle ASF frame by a Japanese maker for woolen, worsted, and man-made fiber yarns. Drafts from 60 to 150 are possible. The pot rotates at 18,000 rpm. and the yarn is laid by centrifugal force against the inside of the pot from which it is rewound on a spindle inserted into the pot in a second, short cycle of operation. Direct labor is said to be one-third that for conventional ring spinning. *Hiroshima Precision Machine Works (Mitsubishi S. & E. Co.)*



E-46—An "incapsulated" weatherproof a-c motor has just been introduced under the brand "Duty Master". The windings are vacuum impregnated with an epoxy resin and the cables are protected by moisture proof silicon rubber. Although an open motor, it is said to exceed splashproof motor specifications. Horsepowers range from 1 to 125, in standard speeds and voltages. *Reliance Electric & Engineering Co.*

E-47—A new ring-spinning system comes from Belgium, based upon a wholly different guide between the last set of drafting rolls and the traveler. This guide delivers the yarn to the traveler from a point outside the spindle axis. The ring rail moves with lift of 17½ inches. Tensions are said to be lower, twist is inserted between the rolls and the guide, and packages from 2 to 5 pounds are possible. The R.T.F. frame has variable-speed drive. Spindle speeds from 4,000 to 14,000 rpm. are reported. *Ateliers Houget.*

Equipment & Supply News

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

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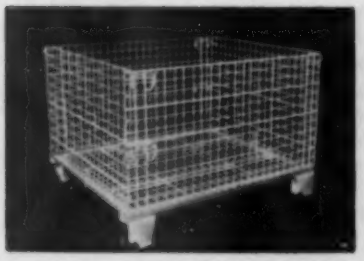
E-48—A wool staple-length recorder measures length of grease wool staples to ± 0.1 inches and prints results on standard adding-machine tape. The new instrument handles staples from 0.2 inches to 9.9 inches at a rate of 50 per minute for shorter fibers. It registers total length of a group of staples and counts them so that average length is easily determined. *United States Testing Co.*

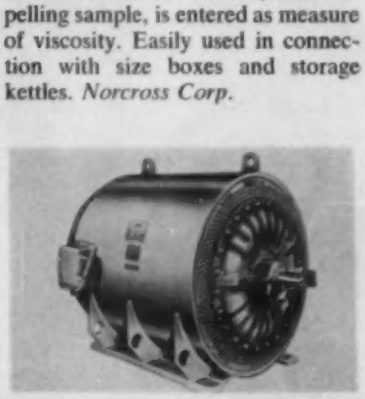


E-49—Wire mesh boxes that are collapsible are available for production or storage work. They fold to pallet height and have a rated capacity of 2000. Non-slip locks prevent accidental opening of the sides. *Republic Steel Corp., Berger Div.*

E-50—A new-model wool oiler, available from England, has a built-in emulsion tank and an accurate metering device. Machine is located at outlet of opener where fibers, still airborne, swirl around a centrally located atomizer. Thence the treated stock is drawn pneumatically for delivery to bales, bins, or card hoppers. When no wool is being fed, the oil is shut off. *Spencer & Halstead Ltd. (Atkinson, Haserick & Co.)*

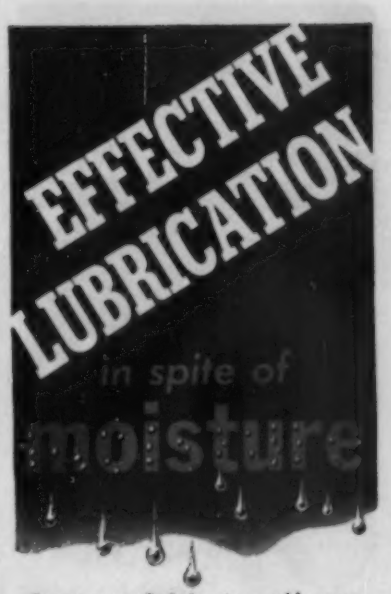
E-51—The line of NQO panelboards now combines protection for power loads with lighting and appliance circuits. They are available with main lug ratings up to 600 amperes. Plug-in branch circuit breakers of 1, 2, or 3 poles have ratings from 15 to 100 amperes. *Square D Co.*

E-52—A new viscometer measuring element (model M7A) is said to be particularly suitable for textile applications. A piston draws sample into tube; lifting mechanism is released, and time required for piston to fall to bottom of tube, thus expelling sample, is entered as measure of viscosity. Easily used in connection with size boxes and storage kettles. *Norcross Corp.*



E-53—A range of tube-cooled motors up to 2000 hp. is now available in standard enclosed construction and in explosionproof design. Tube-cooled motors are especially for use in unfavorable environments, including moisture, chemicals, vapors, dust, etc. *Louis Allis Co.*

. . . *Turn the page*



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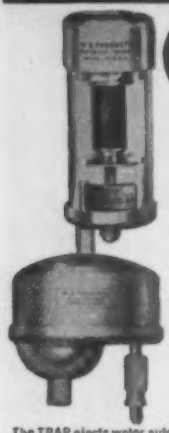


M-B

AUTOMATIC WHIRL-A-WAY AIR LINE FILTER MODEL W-1 and TRAP

RIBBON TYPE FILTERING UNIT removes solids .00039 and larger. Transparent plastic bowl makes filtered foreign matter visible. Gives maximum protection to all types of Lint blowers, Blow-off Hoses and various air-operated controls.

The TRAP ejects water automatically. Operates upon accumulation of 3 to 4 ounces. Discharges in less than 5 seconds. Assures dry air in pneumatic system at all times. Non-corrosive throughout.

M-B PRODUCTS
46 VICTOR AVE., Div. 11
DETROIT 3, MICHIGAN
CIRCLE 256 ON READER SERVICE CARD

J. E. SIRRINE COMPANY

Engineers Since 1902

Textile Mills & Finishing Plants
Water Supply
Waste Disposal
Steam & Hydro Power Plants
Appraisals
Pulp & Paper Mills
Surveys & Reports

GREENVILLE,
SOUTH CAROLINA

Equipment & Supply News

. . . *Begins on page* 133

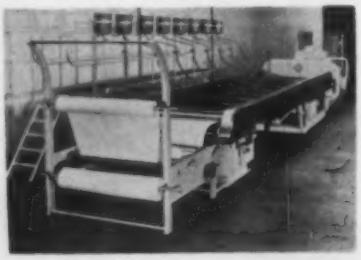
For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

E-54—To calibrate a thread-strength machine, British Wool Industries Research Association has devised a simple instrument based on the point at which a concave ribbon of steel buckles across a pivot when pull is exerted at the outer end. Accuracy of repetition is claimed as better than 1%. Several replaceable buckling elements are supplied to give the device a range of values. *"Torridon"*

E-55—An economy-type hand pallet truck is available with hydraulic lift. Widths are 21 and 27 inches. and fork lengths 32, 36, 42, and 48 inches. Capacity is 2200 pounds. Forks are raised by pumping truck handle, lowered by foot pedal. *Raymond Corp.*

E-56—An unwind and rewind unit for handling web materials (textiles, plastics, etc.) 84 inches wide is available with numerous attachments. Programmed oscillations may be had merely by cutting cardboard cam which a sensing head will follow. Also provided are automatic guiding and centering, recording of width, slitting, measuring, and computing devices. *Web Controls Corp.*

E-57—Variable-speed sheaves for 10 and for 15 horsepower have been made available. Both have maximum pitch diameters of 10 inches. A series of resilient rubber keys transmit the belt torque. Bearing surfaces are re-oiled with each rotation of the pulley. The sheaves are designed for use with angled motor bases and V-groove (rather than flat) companion sheaves. *T. B. Wood's Sons Co.*

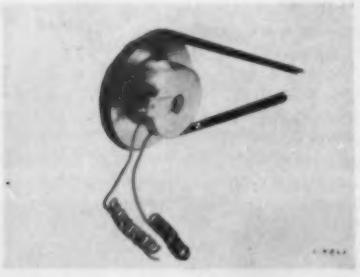


E-58 — Mechanical screen-printer from the Netherlands has new refinements of design which permit it to run 853 yards per hours of fabric impressed with 19 different colors. Micromatic control is said to permit register within 0.01 millimeter. A special blanket carries the cloth under the stationary screens which are lowered and squeegied as the cloth proceeds intermittently. *Gebr. Stork & Co.*

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

. . . *Begins on page* 133

E-59—New electric pick counter system gives complete production information from all parts of the mill at one centralized location. The working area is thus freed from individual counters. The system may be set up for two, three, or four shifts; each shift being tallied on its own counters. The electric units are small and sealed against dust and dirt. The Model D-6 contactor may be attached to a loom, spinning frame, or other production machine whose work can be totaled in convenient units. *Durant Mfg. Co.*



E-60—A new electro-magnetic disc clutch, CT 14, of miniature size is now available, designed for use where space is minimum. It is only 1½ inch in diameter and ¾ inch in depth. Sheave or gear may be mounted on the driven hub which also serves as an armature. Crown teeth, pitched for easy engagement at a low rpm., are magnetically engaged and spring released. *Stearns Electric Corp.*

E-61—A line of reversing starters is available said to occupy no more panel space than non-reversing starters. Connections are made from the front. Line comes in NEMA sizes 0, 2, and 3. Melting alloy or bi-metallic overload relays are provided. *Square D Co.*

E-62—Automatic travelling cleaners servicing roving and spinning frames and looms have been improved by numerous refinements. The roving cleaner cuts its air current toward any particular frame when the frame stops, thereby preventing breaks, doublings, etc. The spinning cleaner can travel over as many as 30 frames. The loom cleaner travels closely over front and back of the looms; and, by intermittent air currents, sets up a fluttering of the warp which aids in avoiding lint accumulation. *American MonoRail Co.*

E-63—A new-type saturator for nonwovens, developed jointly by a man-made fiber firm and a machinery maker, is said to saturate webs rapidly and uniformly, without drafting or distortion. Called the Rando-Bonder, it uses two endless wire screens, the lower screen supporting the web and the upper compressing and holding the batting in place during processing. *Celanesee Fibers Co.* and *Curlator Corp.*

LOGWOOD

best choice for

BLACK

Black . . . always the ultimate in style and practicability. And to be sure you choose the right black for dyeing nylon, silk and wool, specify LOGWOOD blacks. Check these outstanding performance advantages:

★ TRUE BLACK SHADE

★ SUPERIOR FASTNESS OF COLOR

★ ACTUAL WEIGHT INCREASE

★ LOW COST

★ NO HARMFUL EFFECT ON FIBERS

★ SIMPLE METHOD OF DYEING

Veteran chemists and dyers all over the world depend on LOGWOOD when they want the best in black. Available in powder, crystal and liquid forms. Write today for detailed information.

U. S. Distributor

AMERICAN DYEWOOD CO., INC.
374 MAIN ST., BELLEVILLE, N. J.

The West Indies Chemical Works, Ltd.
70 Wall St., New York 5, N. Y.

DOUBLE RUB, FOUR BANK TAPE CONDENSER

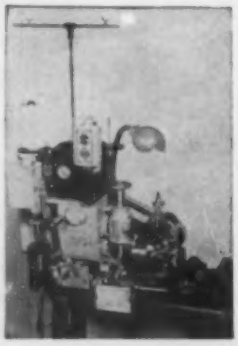
Built in 48", 60", 72" widths for adaptation to all carding machines. Write for information.

Duesberg-Bosson of America, Inc.
Main Street Jefferson, Mass. P.O. Box 25
CIRCLE 257 ON READER SERVICE CARD

NEW MODEL #11-B.V. #25

- Fine Stitch on Selvage
- Coarse Stitch in Center

The fine stitch on the selvage is used to prevent the selvage from rolling back at the seam of the goods; with the coaser stitch in the body of the cloth so as not to slow down the time in stitching the seam.



This combination can make several different types of stitching, such as:

5 stitches in the center and 15 stitches on the selvage
5 stitches in the center and 10 stitches on the selvage
7 stitches in the center and 21 stitches on the selvage
7 stitches in the center and 14 stitches on the selvage

We can give you two or three times as many stiches per inch on the selvage as in the body of the cloth.

DINSMORE MANUFACTURING CO.
Box 267 Salem, Mass.

NEWS ABOUT SUPLIERS

AIR REDUCTION CHEMICAL CO., New York, N. Y.—Has named P. R. Beck and D. A. Smith to its Chicago, Ill., office as sales and development representatives. . . . **ALLIED CHEMICAL CORP.,** New York, N. Y.—Has started an expansion of its laboratory facilities of its General Chemical Div. near Morristown, N. J. The construction is expected to be completed in the last quarter of next year. The company's Fiber Marketing Dept. has appointed Othello Scarponi as end-use development technologist for Caprolan nylon. . . . **AMERICAN PULLEY CO.,** Philadelphia, Pa.—Including its Hubbard Spool Div., has merged into Van Norman Industries, Inc., New Bedford, Mass. . . . **AMERICAN VISCOSE CORP.,** Philadelphia, Pa.—Has announced that Dr. H. H. Cudd, vice president in charge of its research and development, has been named president of AviSun. M. V. Macfarlan has been named general sales manager of American Viscose Corp.'s Fibers Div.

WILLIAM H. STONE (left) has been appointed Southeastern Div. manager for National Starch & Chemical Corp., New York, N. Y. JOSEPH W. SELDEN (center) has been elected divisional vice president of the Chemical Div., Minnesota Mining & Mfg. Co. ELDON F. MATTESON (right) has been appointed North Carolina Div. manager for Daniel Construction Co., Greenville, S. C.

BECCO CHEMICAL DIV., FOOD MACHINERY & CHEMICAL CORP., Buffalo, N. Y.—Has promoted J. F. Whalen, Jr., to Southern-district sales manager with headquarters in Charlotte, N. C. V. E. Moore has been promoted to Mid-West district manager sales with headquarters in Chicago, Ill., and D. N. Threader has been assigned sales representative in the Ohio-Indiana area. . . . **BIGELOW-SANFORD, INC., HARTFORD FIBRES CO.,** New York, N. Y.—Has announced that its plant in Rocky Hill, Conn., will start spinning Zantrel early in September. . . . **BIRCH BROS., INC.,** Somerville, Mass.—Has named H. J. Anderson & Co., Toronto, Ont., Canada, exclusive representative in Canada. . . . **BORDEN CO.,** New York, N. Y.— and US Rubber Co., New York, N. Y., are forming a jointly owned chemical company called Monochem, Inc., for the production of acetylene and

HAROLD A. SWANSON (left) has been named vice president in charge of the Technical Products Div. of E. F. Drew & Co., Inc. K. RUSSELL KNOBLAUCH (center) has been named market sales manager for the Industrial Products Group of Minneapolis-Honeywell Regulator Co., Philadelphia, Pa. M. C. WAKEFIELD, JR., (right) has been named sales manager of the Polyco-Monomer Dept., Borden Chemical Co.

vinyl chloride monomer. Borden Chemical Co. has announced that J. H. Christopher, Jr., has been appointed sales manager for the Coatings & Adhesives Dept.

ARMSTRONG CORK CO., Lancaster, Pa., has built this one-story brick structure in Greenville, S. C., and will serve the Southeastern textile industry from this location.

BRISTOL CO., Waterbury, Conn.—Has named R. M. Gabey to the position of export manager with headquarters in Waterbury. . . . **CIT CORP.,** New York, N. Y.—Has elected C. J. Crump, Jr., vice president in charge of credit and operations. . . . **A. B. CARTER, INC.,** Gastonia, N. C.—Has named L. O. Bellerose sales engineer for the New England territory for the company's Carter Traveler Co. . . . **CELANESE CORP. OF AMERICA,** New York, N. Y.—Has named H. B. Bartley, Jr., field-sales manager of Celanese Chemical Co. . . . **CHEMSTRAND CORP.,** New York, N. Y.—Has promoted Peter Bubela to manager of export sales, and J. H. Barrows has been promoted to manager of industrial merchandising. . . . **CLEVELAND CRANE & ENGINEERING CO.,** Wickliffe, Ohio—Has announced that all sales activities will be consolidated into one sales department under R. G. Birkin, general sales manager, and J. G. Frischkorn, sales manager. The company has also announced that Cleveland Tramrail Philadelphia Co., Philadelphia, Pa., is representing the Cleveland Tramrail line of overhead materials-handling equipment.

CLINTON CORN PROCESSING CO., Clinton, Iowa—Has named R. C. Rau to sales manager of primary products with headquarters at Clinton. . . . **CREAMERY PACKAGE MFG. CO.,** Chicago, Ill.—Has appointed W. J. Moore special representative for the Textile Div. . . . **DIXON CORP., TEXTILE DIV.,** Bristol, R. I.—Has named C. E. Hett, Jr., sales engineer for Georgia, Alabama, and Tennessee. . . . **DOW CHEMICAL CO.,** Williamsburg, Va.—Has named C. E. Lowry product manager for Rovana micro-tape. J. A. Jones has been named assistant to the sales manager of the textile-fibers sales department. Charles Goulekas, James Foley, and D. Roads have been named to the New York City sales office. . . . **DURANT MFG. CO.,** Milwaukee, Wisc.—Has appointed A. B. Holmes Mid-West and Southern regional manager.

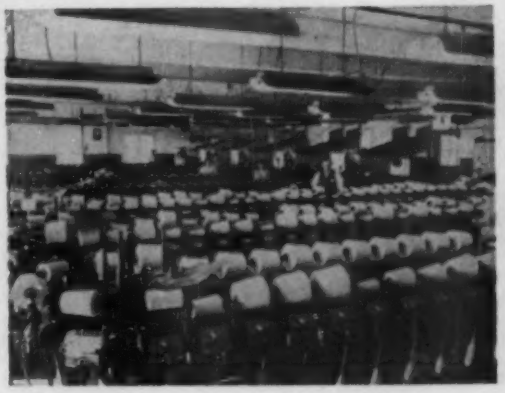
EATON MFG. CO., CLEVELAND WORM & GEAR AND FARVAL DIVS., Cleveland, Ohio—Has appointed new engineering sales representatives in Cleveland, Pittsburgh, and Philadelphia to replace The Dingle-Clark Co., which has recently retired from the business. R. V. Robison Co. has been named in Cleveland; J. P. Murray Co. in Pittsburgh; and W. M. Stilwell in Philadelphia. . . . **EMKAY CHEMICAL CO.,** Elizabeth, N. J.—Has named R. L. Carpenter sales representative in the North Carolina and South Carolina area. . . . **FAFNIR BEARING CO.,** New Britain, Conn.—Has named S. G. Fisher general sales manager. . . . **FIDELITY MACHINE CO.,** Philadelphia, Pa.—Has been sold to Singer Mfg. Co., New York, N. Y. Fidelity will operate as a subsidiary and will be a part of Singer's Special Products Div. . . . **GENERAL ANILINE & FILM CORP., DYESTUFF & CHEMICAL DIV.,** New York, N. Y.—Has promoted Dr. Richard Berger to supervisor of market research. . . . **HEYDEN NEWPORT CHEMICAL CORP.,** New York, N. Y.—Has named R. M. Aude president of the Heyden Chemical Div. R. J. Keltz has been appointed district manager of the division's Philadelphia-Wynnewood sales office.

HOOKER CHEMICAL CORP., Niagara Falls, N. Y.—Has promoted J. M. Glaze to supervisor of organic chemical for the

ABBOTT MACHINE CO., Inc.

WILTON, NEW HAMPSHIRE

SOUTHERN SALES AND SERVICE: GREENVILLE, S. C.



AUTOMATIC CONE OR TUBE WINDERS—for winding all types of spun yarns on cones or tubes for Warping, Dyeing, Twisting, Quilling, Knitting or Sales Packages.

SPECIAL WINDING UNITS FOR KNITTING CONES—include a new slub catcher and a new waxing attachment, which uses standard size commercial wax disks.

LARGE PACKAGES—can be wound up to 11½ inches in diameter for use on shuttleless looms and looms that require a cone supply.

MODEL I AUTOMATIC QUILLER—for coarse count cotton, worsted, wool and other spun yarns, delivers full loom bobbins automatically into boxes, onto pinboards, on wide belt conveyor for inspection of bobbins, or into specially made magazines for automatic loom feeder.

MODEL II HIGH SPEED AUTOMATIC QUILLER (10,000 R.P.M.)—for winding fine count cotton and synthetic yarns of either spun or filament construction.

Also delivers full loom bobbins automatically into boxes, onto pinboards or wide belt conveyor for inspection of bobbins.

Under some conditions one operator can run two or three machines and produce upwards of 2500 full loom bobbins per hour.

ABBOTT FULLY AUTOMATIC RADIAL QUILLER, MODEL II—especially designed for flexibility, is very versatile and particularly well adapted for winding numerous small lots of filling.

Winds coarse or fine count cotton, worsted, wool, rubber and various synthetic yarns, either spun or filament.

Automatic delivery of full loom bobbins onto pinboards, wide belt conveyor for inspection of bobbins, into baskets or other type containers.

Automatic delivery of bobbins can also be supplied whereby full loom bobbins from the individual cones and spindles are delivered into separate containers, which is highly desirable for loom finish yarns and the like.

The Radial Quiller can also be equipped with measured yardage attachments to give accurate, uniform bobbin yardage, as required for two-shuttle looms.

A wide range of spindle speeds for approximately 1000 R.P.M. to 10,000 R.P.M. is obtainable.

One operator can run several machines and thus produce up to 2000 loom bobbins, or more, per hour.

CIRCLE 161 ON READER SERVICE CARD 161

Eastern Chemical Div. R. W. Roach succeeds Mr. Glaze in the New York district. . . . **HOWARD BROS. MFG. CO.,** Worcester, Mass.—Has named G. W. Enloe sales representative with headquarters in Atlanta, Ga.

RODNEY HUNT MACHINE CO., Orange, Mass.—Has named M. H. Hartney sales engineer for the Industrial Roll Div. . . . **KESSLER CHEMICAL CO., INC.,** Philadelphia, Pa.—Has named K. T. Kraner marketing manager. . . . **LEESONA CORP.,** Providence, R. I.—Has announced that Robert Leeson, Jr., has joined the company. . . . **METLON CORP.,** New York, N. Y.—Has appointed R. H. Fleming Southern representative for Tennessee, Georgia, Alabama, and Florida. . . . **NOPCO CHEMICAL CO.,** Newark, N. J.—Has announced that it will build a plant in New Jersey for the production of isocyanates. . . . **OLIN MATHIESON CHEMICAL CORP., PACKAGING DIV.,** New York, N. Y.—Has moved its general sales office and New York-New England sales office for film operations to larger quarters at 460 Park Ave. . . . **ORGANIC CHEMICAL CORP.,** East Providence, R. I.—Has elected E. D. Smith vice president and general manager of its Southern Div. with headquarters in Concord.

PHILADELPHIA & READING CORP., New York, N. Y.—Has acquired a major stock interest in Chatham Chemical Corp. The joint venture will be known as Chatham-Reading Chemical Corp. . . . **PITTSBURGH PLATE GLASS CO.,** Pittsburgh, Pa.—Has formed a marketing section and has realigned the management personnel in the Glass-Fiber Div. . . . **WILLIAM POWELL CO.,** Cincinnati, Ohio—Has named H. J. Coombe and R. A. Miles West Coast sales engineers. . . . **PUTNAM CHEMICAL CORP.,** Beacon, N. Y.—Has named E. Schober technical manager. . . . **REFINED PRODUCTS CO.,** Lyndhurst, N. J.—Has established sales offices in Charlotte, N. C., and Columbus, Ga. . . . **RHODIA, INC.,** New York, N. Y.—Has named Ralph Gossett & Co. representative for Rhovyl fibers in the Southern states. . . . **SACO-LOWELL SHOPS,** Boston, Mass.—Has announced that T. J. Ault has resigned as president and director. T. J. Jackson has been named sales engineer for the Saco-Lowell Textile Machinery Div. with headquarters in Atlanta, Ga.

SEYDEL-WOOLLEY & CO., Atlanta, Ga.—Has appointed C. W. Braswell technical sales representative for its finishing chemical division in Alabama, Georgia, and Tennessee. . . . **SIGNODE STEEL STRAPPING CO.,** Chicago, Ill.—Has named R. N. King director of foreign sales. . . . **SOABAR CO.,** Philadelphia, Pa.—Has elected C. B. Hutchinson senior vice president in charge of sales. . . . **SPAULDING FIBRE CO., INC.,** Tonawanda, N. Y.—Has named E. C. Leitz director of sales administration, and J. E. Miner director of liaison engineering. . . . **STANDARD MILL SUPPLY CO.,** Providence, R. I.—Has named J. J. Fine vice president and manager of the mill-supply division and Michael Lombardi vice president and manager of the rebuilt-machinery division. . . . **TAYLOR INSTRUMENT COS.,** Rochester, N. Y.—Has named W. C. Gray to Southeast sales manager.

TERRELL MACHINE CO., INC., Charlotte, N. C.—Has named J. C. Cobb to the Southern Sales staff. . . . **TILLINGHAST-STILES CO.,** Providence, R. I.—Has announced that J. B. Jamieson Co. has combined its operations with them. . . . **WHITIN MACHINE WORKS,** Whitinsville, Mass.—Has named K. B. Nixon to its sales staff in Atlanta, Ga.

NOW. . . with Coats & Clark nylon travellers *in color* . . . you can! Colored travellers allow for quick, accurate identification . . . enabling you to distinguish easily between various weights and style applications in the twisting room.

All colors are carefully spaced for maximum identification ease . . . repeated only in distinctly different sizes or types. Coats & Clark's wide, in-stock selection includes 237 styles in a range of 16 colors. Color chart . . . as well as sample colored nylon travellers . . . are yours for the asking.

One word of caution: these colored travellers cannot be dyed and also given the Coats & Clark special finishing treatment that imparts the longest life and greatest abrasion resistance to the traveller. For the time being, one may have to choose between the advantages of color identification and some reduction in traveller life. For best performance, we recommend the *special finish* (used on all regular shipments) that Coats & Clark has developed over a period of years through its Research activities and extensive observation of mill performance under operating conditions.

Judge for yourself. Try both regular and colored nylon travellers, and evaluate their advantages and performance under your own operating conditions. Or, have one of our experienced Coats & Clark sales engineers help you work out . . . *in your own mill* . . . the most efficient traveller application for your needs.

NEWS ABOUT MEN

ALEXANDER J. MAINO has been appointed executive vice president of the Southern Div., Massachusetts Mohair Plush Co., Kings Mountain, N. C.

Cleveland L. Adams, Auburn, was elected secretary & treasurer of the Alabama Textile Operating Executives.

D. E. Anderson has been appointed superintendent of finishing at the Weeks Div., Hanes Hosiery Mills Co., Winston-Salem, N. C.

David G. Baird has been elected a member of the board of directors of M. Lowenstein & Sons, Inc., New York, N. Y.

William F. Brommelsiek has been named manager of dyeing, research, and development in the technical department of Mohasco Industries, Inc., New York, N.Y.

Frank E. Byrne has been elected vice president of Cannon Mills, Inc., New York.

John P. Baum, J. P. Stevens & Co., New York, N. Y., was elected vice president of the Georgia Textile Manufacturers.

D. O. Carpenter, manager of the Kendall Company's Oakland plant, Newberry, S.C., will retire after 1960.

John Duerst, retired director of experimental work and research with Coats & Clark Inc., Clarkdale, Ga.

James E. Entin has been named to a high executive post at Bates Fabrics, Inc., a division of Bates Mfg. Co., Lewiston, Me. He will report to the president on matters of product development and research, new merchandise products and sales.

Fred H. Feldmann has been appointed superintendent of the yarn department of Pittsfield Industries, Inc., Pittsfield, Me.

Alfred Flaxington has been appointed plant superintendent of Coats & Clark's Pawtucket, R.I., mill.

Walter M. Gaston has been appointed manager of American Enka Corporation's Lowland, Tenn., rayon filament plant.

A. Phillip Goldsmith has been elected president and director of Mojud Co., Inc., L.I. City, N.Y.

A. W. Gunn has resigned as vice president of Callaway Mills Co., LaGrange, Ga.

Thomas L. Hedgecock has been appointed superintendent of knitting of the Winston Div., Hanes Hosiery Mills Co., Winston-Salem, N.C.

H. G. Heedy has been named plant manager of American Enka Corporation's Lowland, Tenn., rayon-staple plant.

Paul Hendricks has been appointed superintendent of knitting of the Weeks Div., Hanes Hosiery Mills Co., Winston-Salem, N.C.

Jan Heykoop has retired as manager of American Enka Corporation's Lowland, Tenn., rayon-filament plant.

apart at a glance?

Advantages of Coats & Clark Nylon Travellers:

- Up to twice as high spindle speed
- Less staining of yarn
- Much less oil required
- Longer-lasting travellers
- Less down time
- More yardage on your present bobbins
- Less end breakage
- Less stock of travellers
- Cooler running ring rails and rings
- Larger diameter rings, last indefinitely
- Greater safety for workers
- Cleaner, quieter frames

COATS & CLARK INC.

NYLON TRAVELLER DIVISION, 1292-98 McCarter Highway, Newark, N.J.

COATS & CLARK INC.
Traveller Division, Dept. 15,
1292 McCarter Highway, Newark, N. J.

☐ Please send me Color Chart for Nylon Travellers.

☐ Please send me sample Nylon Travellers in Color, Style #_____
(Indicate traveller designation here)

*Name*_____

*Mill Name*_____

*Address*_____

*City*_____ *Zone*____ *State*_____

CIRCLE 163 ON READER SERVICE CARD 163

WILLIAM E. CRUICKSHANK (left) has been appointed plant manager and RALPH STOTT (right) plant superintendent of Bradford Dyeing Association Westerly, R. I. Mr. Cruickshank had been plant superintendent for the past three years and has been with Bradford for thirty-five years. Mr. Stott had been the superintendent of the bleaching division.

J. HAINES SPENCER has been appointed vice president and general manager of the new USF-Arnold Finishing Div. of Indian Head Mills, New York, N. Y.

HENRY C. HOFFMAN has been elected executive vice president of Reeves Brothers, Inc., New York, N. Y. He had been vice president, secretary and director.

Clark M. Hubbard has been named chief industrial engineer, Monarch and Ottaray plants, Monarch Mills, Union, S.C.

Arthur G. Humphrey, vice president of Cone Mills, Inc., Greensboro, N.C., has retired.

Leonard S. Little has been awarded the 1960 Harold C. Chapin Award of the American Association of Textile Chemists and Colorists.

Tom N. King has been promoted to head of industrial engineering, Dalton and Tallapoosa Mills, American Thread Co., Dalton, Ga.

George P. McClenaghan, vice president of J. P. Stevens & Co., Inc., Greenville, S. C., has been named president of the South Carolina Textile Manufacturers Association.

William E. McGuirk, Jr., has been elected to the board of directors, Mount Vernon Mills, Inc., Baltimore, Md.

Paul K. McKenney, Jr., vice president of Swift Mfg. Co., Columbus, Ga., has been elected president of the

OVER 150
TEXTILE FINISHING
INSTALLATIONS
to the good

Thinking of building, modernizing, or simply extending present facilities? Lockwood Greene can make available to you more than a billion dollars worth of experience in textile plants of all kinds... cotton finishing, wool processing, synthetic fiber, woolens & worsteds, knit goods and what have you. From plans to finished plant, we are with you all the way.

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Over a Century of Industrial Plants Design Experience

NEWS ABOUT MEN

Begins on page 163

Georgia Textile Manufacturers Association.

Elliott Morrill has been elected president of the American Association of Textile Chemists & Colorists.

Roland E. Myers has been named assistant superintendent, yarn-manufacturing division, Dixie Mercerizing Co., Winston-Salem, N. C.

Bill Rhyne, formerly with Firestone Textiles, Gastonia, N. C., has been promoted to plant manager of Firestone's textile mill in Sao Paulo, Brazil.

Harvey A. Robbins has been appointed vice president of the Wamsutta and Pacific Mills domestic divisions of M. Lowenstein & Sons, Inc., New York, N. Y.

L. D. Sayers was elected chairman of the Alabama Textile Operating Executives.

W. N. Scroggins, Opelika, was elected vice general chairman of the Alabama Textile Operating Executives.

Don Shaw, Jr., has been appointed vice president of Milliken Woolens, New York, N. Y.

J. Clyde Simmons has been named plant manager of Gerrish Milliken Mill at Pendleton, S. C.

G. Scott Watson, Jr., has resigned as secretary and treasurer of Spry and Watson Mills, Inc., Hickory, N. C.

J. E. Whatley, Jr., has been promoted to plant manager of Kingsley Mill Corp., Thomson, Ga.

A. L. Zachry, Jr., president of G. H. Rauschenberg Co., Dalton, Ga., was elected president of Tufted Textile Manufacturers Association.

OBITUARY

John T. Abercrombie, 86, retired superintendent of Pickens Mill, Pickens, S. C.

Murray Anthies, 67, president of Montauk Mills, New York, N. Y.

John C. Borden, 59, former chairman, Borden Mills, Kingsport, Tenn.

G. M. Coker, executive of Wehadkee Yarn Mills, Talladega, Ala.

Andrew Collins, 72, retired manager of the Ayer Woolen Mills, Lawrence, Mass.

Frederick R. Crowell, president of Delaware River Jute Mills, Inc., Philadelphia, Pa.

Carl A. Fick, 69, retired executive vice president, Ames Textile Corp., New York.

Charles Frankil, 63, superintendent at Union Knitting Mills, Philadelphia, Pa.

Harvey T. Krug, 74, director of the Doon Twines Ltd., Kitchener, Ontario, Canada.

Samuel Lecky 81, retired overseer at Pacific Mill, Lyman, S. C.

Albert S. Pratt, 79, president of the Great Barrington Mfg. Company, Great Barrington, Mass.

Ernest G. Rice, 50, president and owner of the Jerome Hosiery Mill, High Point, N. C.

Edward H. Suessmuth, vice president of Timme Corp., Wilson, N. C.

Berry L. Swett, 53, retired overseer of weaving at Judson Mill, Greenville, S. C.

Edward C. Tomkins, 79, retired vice president of the P. H. Hanes Knitting Co., Winston-Salem, N. C.

Here is a dependable, single-line service offering blanket coverage of *every* point in South Carolina . . . and coverage of the *most important* textile areas in North Carolina . . . by the carrier providing maximum coverage and service on *all size shipments.*

Linking the textile producing areas with your best markets in the East and West

CENTRAL MOTOR LINES, Inc. *General Offices: Charlotte 1, N C.*

CLASSIFIED SEARCHLIGHT SECTION ADVERTISING

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

DISPLAYED RATE

The advertising rate is $14.25 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

EMPLOYMENT OPPORTUNITIES — $33.80 per inch subject to agency commission.

INFORMATION

DISCOUNT OF 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

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(Not available for Equipment Advertising) $1.50 a line. Minimum 3 lines. To figure advance payment count 5 average words as a line. (See ¶ on Box Numbers.)

POSITION WANTED undisplayed rate is one half of above rate, payable in advance.

BOX NUMBERS count one additional line.

Send New ADS or Inquiries to Class. Adv. of Textile World, P. O. Box 12, New York 36, N. Y., For August Issue Closing July 15th

DOW

TEXTILE FIBERS DEPARTMENT

offers opportunities for

CHEMISTS and ENGINEERS

RESEARCH CHEMIST

MS-PhD organic chemist experienced in dye synthesis and dyestuffs manufacture to work on special dye problems connected with synthetic fiber development

DYEING AND FINISHING CHEMIST

Graduate chemist or textile chemist for developmental and technical service work on commercial dyeing and finishing techniques related to fiber development programs

PRODUCT EVALUATION

Direct testing laboratory for fabric evaluation and develop new testing equipment and procedures

TEXTILE ENGINEER

Coordinate development programs for staple and filament fibers with company sales and technical departments and customers

For further information reply in confidence with resume to

Technical Employment Manager

THE DOW CHEMICAL COMPANY

Williamsburg, Virginia

ADDRESS BOX NO. REPLIES TO: Box No. Classified Adv. Div. of this publication. Send to office nearest you.
NEW YORK 36: P. O. Box 12
CHICAGO 11: 520 N. Michigan Ave.
SAN FRANCISCO 4: 68 Post St.

POSITIONS VACANT

Expert — Experienced textile machinery. Fluent German or French. P-3559, Textile World.

Wanted Finisher experienced in napping & shearing quality wool & hair fabrics. Northern mill. Send detailed resume to P-4702, Textile World.

POSITIONS WANTED

Designer-Stylist. Broad experience on wide and narrow looms, cams and dobby, shaftwork with limited jacquard experience. Combed and karded cottons, blends of cotton, wool and synthetics. Fabrics in shirtings, dress goods, upholstery, men's and women's wear piece goods. Executive manufacturing experience raw material thru weaving. Sound manufacturing, cost and efficiency designed into the fabric for modern weaving. Conversant with markets, can travel. Presently employed, desire strong challenging position. PW-4632, Textile World.

POSITIONS WANTED

Desire to represent established supplier in southeast using Columbus, Ga. as base of operation. Textile engineer graduate, extensive experience in supervising practically every operation of textile manufacturing and spent last several years as textile executive. Well acquainted and excellent relations with textile management throughout area. PW-4736, Textile World.

Narrow Fabrics—desires responsible position —experienced needle or shuttle. Textile school graduate. Prefer South. PW-4729, Textile World.

Finisher on fine woolen and worsted fabrics with long experience, ability and successful record would like position as liaison between mill and New York office or trouble shooter. PW-4572, Textile World.

Long experience woolen carder, also experience on setting up cards and woolen spinning frame. Good references. PW-4568, Textile World.

SELLING OPPORTUNITY WANTED

Established Manufacturers Representative selling Automotive Industry seeks additional textile product for automobile body interiors. RA-4452, Textile World.

WANTED TO BUY

Small Cotton Yarn Dyeing Plant with Production of Approx. 5,000-7,500 lbs. Per Day. North or South.

BO-4442, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

CIRCLE 400 ON READER SERVICE CARD

WHEN

Answering Advertisements

PLEASE *do not send original letters, certificates or photographs. We cannot be responsible for their return. Please send photostat or carbon copies.*

6—ATWOOD MODEL 501 UNIRAILS

HEADLESS PACKAGE . . 8″ GAUGE . . 2¼ POUND PACKAGE . . 164 SPIN. EA.

THROWING

2—Model 551 Super Loft Machines 212 Spin. Ea. . . 142 M R.P.M. . . Excellent
5—Model 550 Super Lofts . . 216 Spin. Ea.
20—Atwood Utilities . . 156 Spin. . . Ball Bearing
150—Model 50 Coners . . All Types . . Will Rebuild to your specs.
1—Model 12 Foster Coner . . 9°15′ . . 50 Spindles
1—Model 102 . . 60 Spindles . . Waxing Units
1—Whitin Novelty Twister . . Model B
1—Whitin 28 Spin. Roving Frame—G-8
1—Whitin RD-5 . . 52 Spindle . . Tape Drive
4—A & W Conditioners . . Steam & Electric
4—Model 200 Redraws . . 68 Spin. . . Spindleless

WEAVING

19—W3AC Looms . . 84″ 2 x 1 . . 1953
2—93″ DY Hi Speed Warpers
1—Hermas Selvage Trimmer . . 1955
1—Procter & Schwartz Air Slasher Housing 60″
12—Fletcher 1952 Tape Looms—32-36-44 space

DYEING & FINISHING

1—Van V. Clip Tenter—20′—1954
2—S. D. Cascade Dye—1-3 arm—1-7 arm S.S.
1—K.W.G. 500 Lb. Skein Dryer—S.S.
1—V.V. Semi-Decatur—3 Blankets
1—Hunter 76″ Pad—2 Roll—pneumatic
1—V.V. 20 Ton 3 Roll Calender
1—Wet & Dry Shrinking Machine S. S.
1—Heinikens 12′ Hooded Beck . . S.S.
1—R&L 3′ Beck—T.E.—S.S.—60″ Deep
1—Hunter 30″ Beck—T.E.—S.S.—50″ Deep
1—Curtin & Hebert Brushing & Sueding
3—30″ S.S. Extractors—Fletcher
1—48″ S.S. Extractor—Troy
2—Henrici S.S. Washers 40 x 84—2 Comp
2—Henrici S.S. Washers 40 x 94—3 Comp.
1—Granger 6 Roll Chasing Calender
1—Sample McCreary Batcher
2—Obermeir Top Dye Kettles—30 Lb.
1—V.V. 70″ Jig—T.E.—S.S.

Wm. Rabinowitz & Sons

TEXTILE MACHINERY, BOBBINS & SUPPLIES

Gordon & Jordan Streets • HEmlock 4-9525 • Allentown, Pa. • Cable: RAB

ONLY PARTIAL LISTING . . . SUBJECT PRIOR SALES . . . SELECTED STOCK OFFERINGS

CIRCLE 402 ON READER SERVICE CARD

TEXTILE ENGRAVING EQUIPMENT

Let us help you with your engraving problems, equipment, and training of your personnel. Location may compel you to have your own print engraving plant—if so, we can offer:

A. Complete engraving installations.
B. Training available either at your plant or any one of several locations in the U.S., Canada or Mexico.
C. Partial installations with various services.
D. Partial list of new & used equipment available for immediate shipment:

1. Cameras
2. Polishing lathes
3. Turning lathes
4. Panto machines
5. Photo copy machines
6. Electric Etch machines
7. Die and mill machines

For further information write, call or wire

ABC PHOTO GRAVURE SUPPLY Corp.

125 Fifth Ave., Paterson, N. J., U.S.A.

Wire ABCENG—Call Armory 4-4416

CIRCLE 401 ON READER SERVICE CARD

FOR SALE

SELECT TEXTILE EQUIPMENT

1—BRUSHING Machine, McCreary, Knitgoods, 60″, B.B., Adjustable rest.
1—BRUSH, P&W., 66″, 4 Roll, 2 Section, Nylon Bristles, Steamer.
3—CROSS BRUSHING Mach., Allied, 48″, Wet type, V-belt Driven.
1—YARN CONDITIONING & STEAMING Mach., R&L., S.S. Lining Auto. Controls.
1—CLOTH CONDITIONING Mach., Sjostrom, 64″, pump, motor, folder.
1—CONVEYOR, Sargent, portable, 20′ long, 30″ wide, Hydraulic lift.
12—CAN COILERS, Whitin, taking Cans 12″ dia. x 36″ high.
1—DOUBLING & WINDING Mach., P&W., 66″, Springfield type, motor drive.
1—SEMI-DECATUR, Gessner, 72″ x 36″ dia. cyl., Nash Hytor Pump, M.D.
1—DESPECKING Mach., P&W., 80″, Scray, Folder, 10 Hp. Motor Drive.
1—CAN DRYER, Textile Fin. Co., Horiz., Monel Cans 49½″ face x 23″ dia.
1—EXTRACTOR, Fletcher, 24″ dia. x 12″ deep basket, Safety Cover, M.D.
1—EXTRACTOR, Am. Laundry, Netrux, 50″, Safety Cover, underneath V-belt Dr.
1—NAPPER GRINDER, D&F, 110″ barrel, face and side grinding wheels.
1—MEASURING & ROLLING Mach., P&W., AWC Model, 66″, 100 yd. dial.
6—NAPPERS, Single, Double Acting, Knitgoods, Felting, 72″ to 90″.
1—CONDITIONING OVEN, Emerson, with Becker Laboratory Balance.
3—PICKERS, D&F., 42″ to 60″, Mixing and Shredding types with Feed Tables.
2—SLITTERS—Cameron, 52″, Models 42F, 61A, Auto. Stop, 12″ and 24″ Rewind.
1—SLIVER TESTER, Saco-Lowell, 3 Groove, motorized, in case.
1—TENSILE TESTER, Dillon, Universal, Model M, 0 to 100 lb. Range.
2—TRAP TWISTERS, Collins, 250 Sp., 3¼″ Ring, 7½″ traverse, motorized.

REAL BUY

1—BATTING UNIT for Synthetics or Cotton, consisting of Murdick Willow, Erlex Magnetic Separator, P&S Ceiling Condenser and the following Hunter equipment: 2 Garnetts, 2 Cylinder, Lappers with Huntermatic Reversing, Floor Apron, Compression Rolls, Slitter, Rollap, Batt Breaker and Folder. Complete as operated with many spare parts. Much of this equipment new in 1955-56. All in Excellent Condition.

McDOWELL ASSOCIATES, INC.

General Offices 51-E 42 Street
New York City 17, N. Y.
Phone: Murray Hill 2-7417

Warehouse No. 1 N. Front
Dock & Water Sts., Hudson, N. Y.
Phone: Hudson 8-8211

CIRCLE 403 ON READER SERVICE CARD

WE OWN AND OFFER FOR SALE

SPINNING

1—Abbott #65 Paper Cone Winder 100 spdls., 8° 04′ cone—1947
1—Universal #44 Rotoconer, 40 spdls., paper cone 9° 36′ cast iron—1947
1—Universal #44 Rotoconer, 120 spdls., paper 90° 36′ cast iron—1951
1—Whitin Roto Drafter, Model A4, 14″ coils—1955
4—Smith Drum Stainless 500 lb. Package Dye—1948
1—Reiter Comber, 6 heads, 12″ coiler—1952
1—Aldrich Picker, 2 beaters, 40″, motor
2—Foster Model #23 Paper Cone Winders, 60 spdls., 1952
4—H & B Spin. Frames, 200 spdls., 4½″ ga., pneumafil, 1947
2—Proctor & Schwartz Non Woven Units, complete—1954

WEAVING

12—C & K Big Six Looms, 60″, 2x1 box, 1949
26—C & K Six Looms, 54″, 4x1 box, 1948
12—C & K W3 Convert. Looms, 64″, 4x1 box, 1939
14—C & K W3 Convert. Looms, 72″, 4x1 box, 1947
13—C & K Jacquard Rug Looms 49″, 204 hooks
24—N. E. Butt Braiders, 12-5 carriers, 12-3 carrier
44—Draper Model E Looms, 44″, cam, proximity sides
3—H & W Elec. & Steam Yarn conditioners—Model ST-3
1—Scott Model J Strength Tester, motor, yarn and cloth
2—Brush Elec. Yarn & Sliver Testers—1951
1—BC Portable Tying-In, Model D course count, motor, 1951

DYEING and FINISHING

1—Morrison Continuous Stainless Williams Dye Range; 15 ton Padder, 2 Williams Units, 3 Wash Units, 5-5 ton Micro-Set squeezers, 1948
1—Butterworth Stainless 8′ enclosed Dye Box. 57″ deep #316 S.S.
1—RH Stainless, 2 compt. Washer, 80″ squeezers, 10 HP
1—V. V. Tensionless Stainless Dye Jigg 72″ wide—1946
1—Morrison Micro-Set Padder, 60″ wide, 8 ton, DC motor
1—Cook PN Pneu. Padder, 60″ wide, 5 ton
2—R I. Stainless 6′ Dye Boxes, 60″ deep
1—Verduin Hyd. Calender, 60″, 3 B.B. Rollers, 40 ton, 1950
1—Meadows Hyd. Embossing Calender 72″ wide, 25 ton 1949
1—Verduin Coating Unit, 64″ w/gas oven 30′, 1952

ALLIANCE

TEXTILE MACHINERY CORPORATION

APPRAISALS • TEXTILE MACHINERY • LIQUIDATIONS

37 NORTH 3RD STREET • ALLENTOWN, PENNSYLVANIA • HEMLOCK 4-4897-8

CIRCLE 404 ON READER SERVICE CARD

BIALEK'S BEST BUYS

72—C&K, S-6, 60", "Big Six," 2 x 1
2—B-C "LL" Knotters
Abbott Quillers, 120 sp., 1951, Pinboard Attachment
2—Cocker Beamers for Tricot
28—C&K, S-6, 56", 4 x 1 Auto.
Terrel "L" Stripper
New Tricot Opener, Tacker
Abbott Quiller, 100 sp., 1953
Choice Harness Frames with S.S. Artex Heddles

THEODORE BIALEK & CO.

6704 Empire State Bldg.
NEW YORK 1, N. Y.
Longacre 3-4978-9

230 Belmont Ave.
HALEDON, N. J.
Lambert 3-5885

CIRCLE 405 ON READER SERVICE CARD

TEXTILE AUXILIARIES INC.

"SPECIALIZING IN BLEACHING, PRINTING, DYEING AND FINISHING MACHINERY"

1—6 Color R.B. & F. 44″ Printing Machine, complete with Backrigging, Dry Cans, D.C. motor, etc.
1—72″—2 Roll Simpson Cut-Off Winder.
1—Van Vlaanderen B.B. 50″ Padder, 18″ diameter rolls.
50 & 80 Gallon Copper Jacketed Tilting Kettles.
Reeves Drives—all sizes, open and closed types.
1—60″ x 66″ Straight-Away Pin Tenter with 55′ Andrews & Goodrich Housing, 3 Canopies for high temperatures.
1—12″ S.S. Dye Beck—Shallow.
1 & 2 Roll 54″ Winders & Batchers.
1—25 H.P. "B.T.A." Motor 220/440 Volt, A. C.
Beetchers—all widths.

We carry spare Padder & Calender Rolls all sizes, also motors from 1 HP to 100 HP.

These are only a few items: *For Detailed List:* *Write, Wire or Phone:*
Dexter 1-9650 Dexter 1-8837 146 West River Street

PROVIDENCE, R. I.

CIRCLE 406 ON READER SERVICE CARD

WANTED

Weaving Unit of 20-36 W-3 or C-4 looms

64-82 inches reed some width Jacquard heads. If possible, complete with warping and quilling will also consider individual machinery.

Offers with particulars to

W-4734, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

CIRCLE 407 ON READER SERVICE CARD

LOOMS WANTED

56 to 64 inch width. C & K "C" series, fully automatic. Prefer 4 x 1, would consider 2 x 1. Must accommodate 8¾" 3 ring quill (no less than 8" quill). Also need vari-speed Drive, 3 H.P. Prefer Sterotrom.

W 4663 Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

CIRCLE 408 ON READER SERVICE CARD

New "SEARCHLIGHT" Advertisements

received by July 15th will appear in the August issue subject to limitations of space available.

Classified Advertising Division

TEXTILE WORLD
P.O. Box 12 New York 36, N. Y.

COMPRESSORS - VACUUM PUMPS

FOR THE FINEST IN REBUILTS

1902 AMERICAN 1960

100 CFM 135 psi 6 x 7 Ing. Rand ES1
138 CFM 100 psi 7x7 Ing.-CPT-Worth
167 CFM Vac Ing. Type 15
285 CFM 35 psi 10x7 Ingersoll ES1
321 CFM 125 psi 16x11 Chicago T-B
420 CFM 40 psi 12x9 Ing. ES-1
465 CFM 100 psi 12x11 ES-1-CPT
528 CFM 100 psi 14x12 Ingor.-Gardner
660 CFM 125 psi 11½x7x7 Joy WN102
686 CFM 100 psi 14x13 Ing.-CPT
823 CFM Vac. 18x7 Ing. ES
940 CFM 30 psi 17x11 Ing. ES-1
1016 CFM 55 psi 17x13 Ing. ES
1100 CFM Vac. 17x7 Joy WGV9

LIKE NEW — 2500 CFM 50 PSI; 19—19x14 Penn. DE-1; 300 HP E-M-S-M 3/60/2300 — USED 6 MONTHS

1270 CFM 40 psi 19x13 Ing. ES-1
1410 CFM 35 psi 20-13 Worth Hb-Ing. ES
3135 CFM Vac. 31x13 Ing. ES

1000 CFM (actual) 100 psi
2—Fuller C200-300H
200 HP Syn .8 PF 3-60-440
Starter—MG Set

American Air Compressor Corp.
Dell & Tax Streets — North Bergen, N. J.

CIRCLE 409 ON READER SERVICE CARD

FOR SALE!

COPPER PRINT ROLLS

40" to 53" long
14½" to 27" cir.
W Bore

JAMES E. FITZGERALD
10 Purchase St. Fall River, Mass.
Tel. OS 8-5616

CIRCLE 410 ON READER SERVICE CARD

6—Werner—60" Dye Jiggs
5—Werner—70" Dye Jiggs
1-Paterson 64" Tuber
1—8'—Blickman enclosed dye beck
2—12" Blickman enclosed dye becks
2—Reiner 54 ga Twin-Knitters

1—Copper roll engraving plant complete w/pantograph machines

1—Vertical Set 18-130" SS cans 35 lb
1—Hinnekens 75" Balloff Machine #212—1950

MAR-DAY TEXTILES
52-60 BERKSHIRE AVE. PATERSON 2, N. J.
MU-4-5132

CIRCLE 411 ON READER SERVICE CARD

FOR SALE
108 Spindles Whitin Schweiter, Winders
Model MS 1941
Consists of 1-3 unit sections
Consists of 3-9 unit sections
Consists of 3-12 unit sections
Consists of 1-18 unit sections
Make offer
FS-4682, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

CIRCLE 412 ON READER SERVICE CARD

WE OWN and OFFER

60—Milton Adj. Steel Beams for 46" XD-24"
1—Uster Warp Tying in Machine 1950
1—Barber-Colman Knotter Model LC
4—Magazine Cone Creels — Sipp — Cocker — Universal
1—Saco Lowell SS-4 Spinning Frames—1950
50—Walter Reconditioned Humidifiers
1000—Amco #5 Atomizer Heads, Controls, etc
250—Fibre Steel Clad Mill Box Trucks
400—Kidde Double Disc Compensator Tensions

"Harness frames & Heddles,
Drop Wires & Warp Stop Motions,
Loom Bobbins & Motors"

PAWTUCKET MILL SUPPLY CO.
240 York Ave. Pawtucket, Rhode Island

CIRCLE 413 ON READER SERVICE CARD

LIQUIDATING

BORDER CITY MFG. CO.
DIV. OF SAGAMORE MFG. CO.

Some of the major items of equipment include:

320—Draper XD Looms, 54" reed space, Diehl and motor driven, 1947-1951
2—Universal #10B Large Package Twisters, 100 spindles, 7" gauge, 1955
12—Atwood Redraw Machines, 68 spdls. 9½" gauge, 1946-1950
56—Atwood Uptwisters, 184 spdls. 9½" gauge, 2 lb. headless package, 1946-1950
2—Sipp-Eastwood Warpers, 54" with magazine creels, 1945, 1948, 1949
2—Johnson 7 can Stainless Steel Slashers, 1945 and 1949
100—Whitin Mod. F Sp. Frames, 3" ga. Casa L.D.
4—Venango SS package dyeing units, 1948
10—Whitin 40" cards
1—Barber-Colman Spooler, 162 pocket, Model KK type C
3—Abbott Quillers, 120 spdls. 1947-1955

Republic

TEXTILE EQUIPMENT COMPANY
40 Worth Street, New York 13, N.Y. • COrtlandt 7-1591
• APPRAISALS • PURCHASE AND SALE TEXTILE MACHINERY • LIQUIDATION OF MILL PROPERTIES •

CIRCLE 414 ON READER SERVICE CARD

LIQUIDATION SALE

1—6', 8' & 12' S.S. Dye Becks, totally enclosed.
1—72" Hinnekens Boil-Off Machine.
8—6' to 15' S.S. Dye Becks.
1—50" V.V. 3-roll Calender B.B.
1—74" Progressive Tubing, Inspection & Measuring Machine with reverse.
1—Set of 18 S.S. 130" Dry Cans 35 lbs. pressure.
10—98" S.S. Dry Cans.
8—72" New S.S. Dry Cans.
8—45" S.S. Dry Cans.
1—60" Morrison Tenter Frame.
1—V.V. 68" Palmer Tenter Unit
1—V.V. 30' x 60" Tenter Frame.
1—Hinnekens Boil-Off Machine 55"—S.S. Conveyor Rods—S.S. Cylinders.
1—Smith-Drum 3 arm stainless steel Cascade Skein Dyeing Machine—1956.
4—70" Werner Dye Jiggs, stainless.
4—60" Hinnekens Dye jiggs, stainless.
2—60" Morrison Dye Jiggs, stainless.
2—60" Werner Dye Jiggs, stainless.
1—54" Embossing Machine.
1—60" Micro Padder—2 rubber rolls.
1—Marrow 60 ABB1 with table & motor.
1—60" Beamer.
2—95" Rubber Rolls 18" & 12" Dia.—$500 for the Set.
3—P.I.V. Drives HM2 with 3 H.P. Motors.
1—#4 Nash Pump 30 H.P. Motor—$350.00.
2—L5 Nash Pumps—$350 each.
2—L4 Nash Pumps & Motors—$300 each.
3—L4 Nash Pumps—$200 each.
Reeves Drives from 0000 to #5.

A & M BLANK CO., INC.

301-313 East 22nd St. (at 7th Ave.) Paterson N.J.
SHerwood 2-1367-8

CIRCLE 415 ON READER SERVICE CARD

IMPROVE PRODUCTION WITH BETTER MACHINERY

3—40" 3-beater single process pickers, blending
4—1949 Whitin Silver Leppers, 9-½" Lap
12—Del. Whitin Bi-Coil Draw., 1949, 14" coilers
15—Whitin Model J. Combers, 1956
16—Del. Saco-Lowell Draw., 1945, 4 del. frames
1—Foster 102 Winder, like new, ½" tubes
3—Abbott 120 sp. Quillers, pinboarding
2—Universal 244 Roto Conors, steel cans
2—Sipp HS warpers, 200 & 800 end creels
2—A&W Yarn conditioners, controls, etc.
2—Terrell Model L Quill strippers, rot. conv.
1—Johnson 7-can Slasher, 30" SS cans
1—Cocker 7-can slasher, 30" SS cans
30—Draper 45" XO looms, exxt. cond., dobby
10—C&K W-3 52" looms, 4x1, low roll
1—Stäubli Shuttle Truing machine
8—S-C Portable Warp Tying machines, K, LC, LS, LL
40—54 ½" x 28" x 19" Section beams
5000—Harness Frames for all size heddles
2—E&H Cloth Folders, Air Lift, 64" & 47½" jaws
100—ANCO #5 Humidifier Heads, complete
100—LIKE NEW 624 hook, dbl cyl. double lift Jacquards, completely rebuilt
4—18" SS Dye Jiggs, tandem
8—60 & 80 gal. SS jacketed kettles
1—Governor 72" napper, 20 roll, M.D.
2—1-H, ES-1, 15 x 11 Compressors, comp.
100—Verdol Rust 3-shift reset pick counters
500—10½" shell or cloth rolls, 3½" diameter
10—Diehl transmitters, 1 HP, 1200, 550 V
100—A-C Loom motors, 1 HP, 1800, 550 V
125—Diehl Loom motors, 1 HP, 1200, 220 V
8—Stainless Double Hook Reeds, 450-700 dents
1—Toledo 1200 lb. Dial Scale, 48x48 platform
2—Cyclone ½-ton electric hoists, 500 V
200 M—7⅝" SS butt A. L. bobbins
250 M—15" Drawtex heddles, excellent
200 M—15" Artex Straight heddles, SS
400 M—12" Flat Steel Heddles, Like New
20 M—NEW 22" Selvage Heddles

MACHINERY SALES CORP.
131 Court Street, New Bedford, Massachusetts
P.O. Box 347 Tel: WYman 9-6274

CIRCLE 416 ON READER SERVICE CARD

Spinning Frames—Completely Modernized

Available Now From Stock

65,000 spindles, 3" gauge, Whitin Model F and B
20,000 spindles, 3" gauge, Saco-Lowell (latest head)
15,000 spindles, 3⅛" gauge, Whitin Model B
7,000 spindles, 3½" gauge, Whitin Model F and B
5,200 spindles, 3½" gauge, Saco-Lowell (latest head)
6,000 spindles, 3½" gauge, Fales & Jenks (latest head)
3,600 spindles, 4" gauge, Whitin Model B

Completely Modernized with:

Open Type Umbrella Creels
Latch Bobbin Holders
Suction End Collection
Double Apron High Draft System
Individual Drive Pulleys with Ball Bearings
Ball Bearing Tape Tension Pulleys
Ball Bearing Top Drive Spindles
High Speed Rings

Suitable for: Warp or Filling Yarns, Cotton or Synthetic Staple

Attractive Prices on all or any portion of these lots
Delivery and Erection Supervision Can Be Included

ROBERTS COMPANY, Sanford, N. C.

manufacturers of textile machinery

Contact Trade-In Dept.: M. C. Golden, SPring 4-8811

Export Dealer Inquiries also Invited

CIRCLE 417 ON READER SERVICE CARD

5-BANLON | 18-FLUFLON | 1-TASLAN

WE OWN & OFFER FOR SALE THE MACHINERY & SUPPLIES OF

YARN THROWING CO., HOPE, R. I.

19—Unirails Model 501 Twisters
8—Atwood Model 200 Redraws
8—Atwood Model 110 Twisters
10M—Shafts—4⅛" x 5"
4—Atwood 10B Doublers
1—Humidity System
10M—Phen. Spools—6" x 3½"
5—Toledo Dial Scales

OFFICE EQUIPMENT & TEXTILE SUPPLIES

Smith Drum Skein Dyers
4—Fidelity Reelers
20M—10B Spools—8" T. x 4⅜" B
100—Univ. & Foster Coners

BOBBINS—SPOOLS—QUILLS—*All Sizes & Types*

PENNSYLVANIA SPOOL & EQUIPMENT CO.

425 LEHIGH ST. ALLENTOWN PA. Phone 3-7545

Complete mill for making linen thread. Complete mill for a slitting & reinforcing metallic yarns.

CIRCLE 418 ON READER SERVICE CARD

FOR INFORMATION

About Classified Advertising,

CONTACT

The McGraw-Hill Office Nearest You.

ATLANTA, 3—1301 Rhodes-Haverty Bldg.
W. D. CRANK *JAckson 3-6951*

BOSTON, 16—350 Park Square
M. J. HOSMER *HUbbard 2-7160*

CHICAGO, 11—520 No. Michigan Ave.
W. J. HIGGENS *MOhawk 4-5800*

CLEVELAND, 13—1164 Illuminating Bldg.
W. B. SULLIVAN *SUperior 1-7000*

DALLAS, 2—1712 Commerce St., Vaughn Bldg.
GORDON JONES-J. PIERCE *Riverside 7-5117*

DENVER, 2—1700 Broadway—Tower Bldg.
J. PATTEN *ALpine 5-2981*

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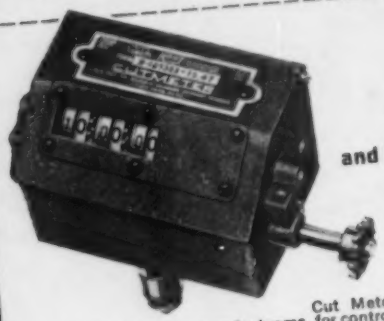

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Cut Meters are predetermining counters for looms, for controlling lengths of cloth woven, without cut marks . . . and thus avoiding over-runs and short pieces.

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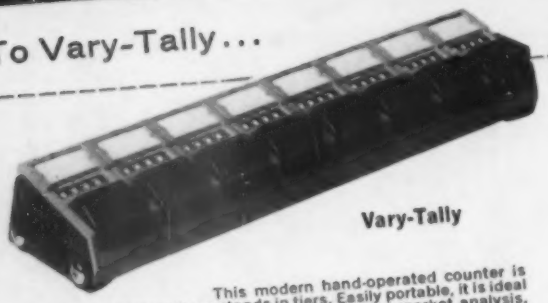

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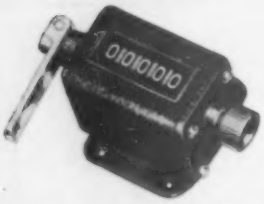
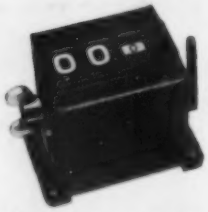
Small Reset Counters



Used on a wide variety of textile machines, including breakers, winders, marking machines, knitting machines and bobbin strippers.

Hosiery Dozens Counter



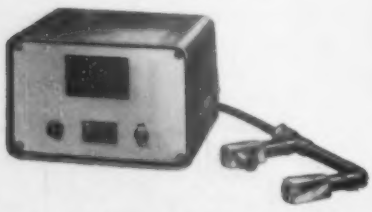
Used in inspection or on knitting machines (as a production counter) . . . shows single pairs and total dozens count.

Double-Wheel Measuring Counters

Ball Bearing — "Exact Ratio" Geared Reset Counter registers linear units (feet, yards, ⅛ of a yard) as material passes under the friction wheels.

High Speed Reset Double Wheel Counter runs suitable from a shaft, measuring drum, cloth, paper, or other material at speeds up to 6,000 rpm or 8,000 cpm.

Count/Pak



One of the new Veeder-Root Count/Paks — an economical device for high velocity, noncontact counting and controlling. Ideal for use on bobbin strippers, also used on folders to permit multiple folder control by a single operator. Speeds up to 2,500 counts per minute with absolute accuracy.

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